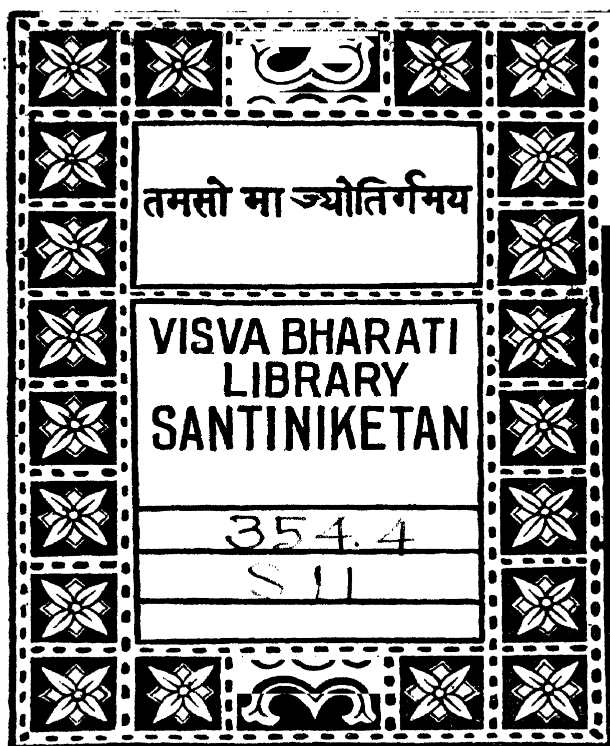

तमसो मा ज्योतिर्गमय
VISVA BHARATI
LIBRARY
SANTINIKETAN
354.4
S 11

ECONOMICS OF RURAL BENGAL

BY

K. B. SAHA, M.A.

LECTURER IN ECONOMICS, DACCA UNIVERSITY ; FORMERLY LECTURER IN ECONOMICS, CALCUTTA UNIVERSITY.

WITH A FOREWORD

BY

SIR JEHANGIR COYAJEE

CHUCKERVERTTY, CHATTERJEE & Co., Ltd.

15, COLLEGE SQUARE, CALCUTTA.

1930

Published by
R. C. CHAKRAVARTI, M.Sc.,
15, College Square, Calcutta.

Printer: S. C. MAJUMDAR,
SRI GOURANGA PRESS,
71/1, Mirzapur Street, Calcutta.

ECONOMICS OF RURAL BENGAL

PREFACE

The present volume is an attempt to study the economic life of rural Bengal. The importance of such a study will be realised from the fact that 93 per cent. of the population of the province live in villages. A study of the economic conditions of rural Bengal thus means a study of the economic life of the great mass of the population of the province.

As a person who was born in rural Bengal, whose early life was passed in it, and who even at the present time spends a considerable part of the year there, I have always had an opportunity of studying the economic conditions in the rural areas in this province. This long association with rural life naturally created in me an interest in the study of the rural problems of this province, and the present volume is mainly an outcome of that interest.

I have to express my indebtedness to Sir Jehangir Coyajee for writing the foreword. To Dr. R. C. Majumdar I am indebted for the help that I received in the publication of the book. Among the colleagues of my department, I have a special obligation to Mr. Ajit Kumar Sen for reading the proofs and also for various useful suggestions. I have also to acknowledge the help that I received in the correction of proofs from two of my other colleagues, Mr. Amiya Kumar Das-Gupta and Mr. Birendra Nath Ganguly. Finally, my thanks are also due to my friend, Mr. Khiti Bhusan Ghosh, M.A., for going through the manuscript.

K. B. SAHA

January, 1930.

FOREWARD

It would be difficult to exaggerate the value and importance of intensive studies of the leading aspects of provincial and regional economics in the case of such a vast country as India. Indeed the value of general works on Indian economics depends on their being based upon monographs and studies of local problems. Fortunately, as regards the rural economics of India, we already possess quite a number of valuable studies of the latter kind. In the case of the Madras Presidency Prof. Slater and his pupils have conducted important surveys of rural conditions. On the Bombay side the works of Mr. Keatinge and Dr. Mann stand out as models of studies in rural economics. The Punjab has been fortunate in possessing men like Mr. Calvert and Mr. Darling who have not only enriched agricultural economics by their own works, but have inspired a number of very useful surveys by other local economists of distinction. On the other hand, Bengal suffered a great loss by the premature death of Mr. Jack who possessed every qualification for dealing adequately with surveys of rural conditions. It is therefore a pleasure to find a young and able economist like Prof. K. B. Saha undertaking the arduous task of giving us a general survey of the rural economics of our province. It is evident that he has prepared himself for the difficult task by a wide and careful study of the extensive material. In particular he has carefully read the various settlement reports which form a literature by themselves and amongst which Prof. Saha has delved with assiduity and discrimination. He has brought an economist's eye to bear upon the rich material before him and has consequently produced a very useful introduction to the rural economics of this province.

After a couple of preliminary and descriptive chapters Prof. Saha enters on the more difficult aspects of his work by

giving us a study—both careful and critical—of the standards of cultivation in the province and makes suggestions for their improvement. From that point forwards he has before him a succession of complicated problems to deal with, and he acquits himself very creditably, though it is to be noted that, generally speaking, his role is not that of the explorer but that of the able systematiser of widely scattered information. How well he has performed that task may be seen, for instance, in the chapter on "Land System" which contains a careful sketch of the economics of tenancy legislation and a well-arranged account of the various tenures. The same spirit of careful and searching investigation marks the chapters on rural labour and population. The last chapter is devoted to a study of middle-class unemployment. It was well that Prof. Saha gave a somewhat wide interpretation and scope to rural economics and included such a treatment of this problem in his book. One of his conclusions in it is to the effect that "if the middle-class young man is to look to agriculture for employment, he must seek land outside Bengal." This position sounds somewhat pessimistic but is certainly thought-provoking. It is to be hoped that Prof. Saha will develop the subject at greater length in the next edition.

It need hardly be added that Prof. Saha's book will prove useful to our students of Economics as well as to the general public which wants enlightenment as regards the problems of rural Bengal.

J. C. Coyajee

Presidency College,
Calcutta,
12th Dec., 1929

ECONOMICS OF RURAL BENGAL

CHAPTER I

PHYSICAL FEATURES AND THEIR ECONOMIC SIGNIFICANCE

The physical characteristics of a country determine in a large measure the nature of the economic activities of its inhabitants. This is particularly true of an agricultural country, for agriculture, of all industries, depends most on the natural conditions of soil and climate. The configuration of a country, the character of the soil, the river and the mountain systems, the amount and the distribution of rainfall—all these factors determine what kinds of agricultural produce can be profitably raised in it. For a proper understanding of the economic life of rural Bengal which is so predominantly agricultural, a study of the physical characteristics is thus an essential thing.

The influence of the physical features of a country on the economic activities of the inhabitants.

On the north as well as on the south, Bengal has very good natural boundaries. The great Himalaya range lies along the entire northern frontier, while the Bay of Bengal extends along all the southern districts from Midnapore to Chittagong. To the north-west, there are the Rajmahal Hills of Santal Parganas, in Bihar; while bordering the western districts of Birbhum, Burdwan and Bankura, there is the table-land of Chotanagpur. To the north-east, there are the Garo, the Khasia and the hills of the Surma Valley. Further south, the outlying district of Chittagong Hill Tracts, as the name implies, generally partakes of the nature of a hilly country. Thus on its three sides Bengal has some

Boundaries.

Significance of the hills and mountains.

important systems of hills and mountains. These give rise to numerous streams, large and small, which, flowing over the extensive plains of the province, and often uniting their waters in their downward course, ultimately fall into the sea.

River system.

Indeed, the most outstanding physical characteristic of the province is its splendid river system, a parallel to which is hardly to be found in any other part of the world. Two of the largest rivers in Asia, the Ganges and the Brahmaputra, in their lower course, flow over the province and merge themselves into the sea which lies to the south of it. The Ganges, the most sacred river of the Hindus, takes its rise high up in the Himalayas in the Tehri State, in the United Provinces, and flowing over that province and Bihar enters Bengal after skirting the Rajmahal Hills. Before it comes into Bengal, it is joined by a large number of tributaries, some of which have their source on the other side of the Himalayas. Thus the Jumna, the Gogra, the Son, the Gandak, the Karmanasha and the Kosi, all the big rivers of Northern India with the exception of the Indus and its tributaries, pour their waters into the Ganges.

The Ganges.

Its tributaries in Northern India.

After it enters Bengal, the Ganges divides itself into two branches, the Bhagirathy, which in its lower course is called the Hooghly, and the present main channel, called the Padma, which proceeds in a south-easterly direction dividing the Rajshahi from the Presidency division. Some four centuries before, the Bhagirathy constituted the main stream of the Ganges ; but as a result of the gradual process of silting up, it was, in course of time, unable to perform its task and so the main current had to find another outlet. In this way the Ichamati, the Jalangi and the Mathabhanga became, each in its turn, the principal channel of the Ganges, until it adopted its

present course and met the Brahmaputra at Goalundo, in the district of Faridpur.[1]

The Brahmaputra has its source near the Manosarowar lake in Tibet. In its Tibetan course it flows under the name of Tsanpo, and assumes the name of Brahmaputra after it enters Assam.[2] As it flows over that province in a south-westerly direction, it receives a large number of tributaries both from the north and the south. After a course of about 450 miles through the Assam Valley, it enters Bengal in the district of Rangpur, and forms the boundary between the Rajshahi and the Dacca division, until it meets the Ganges or Padma at Goalundo. In this part of its course it is known as the Jamuna. Like the Ganges, the Brahmaputra also has changed its course in Bengal, though not so frequently. The present main channel, known as the Jamuna, is of comparatively recent formation. At the time of Major Rennell's survey towards the close of the eighteenth century, the main current of the river flowed across the district of Mymensingh. This is now a poor and shrunken stream of small importance, and still retains the name of Brahmaputra.

The Brahmaputra.

It will be clear that the Ganges and the Brahmaputra carry into Bengal the drainage of practically the whole of Northern India and even of a considerable portion of Tibet. The combined current of the Padma and the Jamuna rolls down in a south-easterly direction, until it is further strengthened by receiving the waters of the Meghna, another great river formed by the union of the numerous streams which rise in the Garo, the Khasia and the hills of the Surma Valley. The Meghna, though it has not such a long course

These two great rivers carry into Bengal the drainage of practically the whole of Northern India.

The Meghna.

1 Imp. Gaz. of India, Bengal, Vol. I, p. 207.

2 Imp. Gaz. of India, East Bengal and Assam, p. 168.

as the Ganges or the Brahmaputra, does not yield to them in respect of breadth which near the junction will be about three miles. This vast confluence of rivers, as it advances downwards, gradually widens its course, and before it falls into the sea, is again divided into a number of wide channels by the formation of large islands at the mouth.

The numerous branches and tributaries of the three rivers.

The Ganges, the Brahmaputra, and the Meghna are the three largest rivers in Bengal. Besides these, however, there are innumerable other rivers of a smaller size, which may broadly be divided into two classes—the tributaries and the distributaries. The tributaries generally rise in the hills or mountains that lie near the borders of the province ; and after a short or long course, as the case may be, and often meeting one another as they proceed downwards, merge themselves into the larger rivers. The distributaries, on the other hand, have altogether a different relation to the mother channel. They do not contribute anything to its stream but are themselves fed by it. They emerge from the larger rivers, and, following routes of their own, fall into other rivers or into the sea. It is not possible within the scope of this treatise to enumerate and describe the courses of all these tributary and distributary rivers of the province, but a brief mention may be made of the more important of them. The principal river in Western Bengal is the Hooghly, which receives from the western districts a number of tributaries—the Rupnarayan, the Damodor, the Ajai and the Mor. In general, it may be stated that the rivers of West Bengal, which fall into the Hooghly, are of the nature of tributaries, having their source in the hills of Santal Parganas, or in the table-land of Chotanagpur. On the other hand, those of Central and East Bengal, the typical deltaic region of the province, are, as a

rule, the offshoots of the Ganges, the Brahmaputra, and the Meghna. Of these offshoots, the more important are the Ichamati, the Jalangi, the Mathabhanga, the Gorai or Madhumati, the Dhaleswari, and the Buriganga. The rivers of Northern Bengal, of which may be mentioned the Tista, the Atrai, and the Karatoa, are, like those of Western Bengal, tributaries. Rising generally from the hills in the north of the province, they flow in a southerly direction, until they lose their separate existence by being absorbed by either the Ganges, or the Brahmaputra.

This network of rivers with their offshoots, tributaries, and inter-connecting smaller channels, locally called *khals*, is of the highest importance in determining the economic condition of the people. They ensure an abundant supply of fish, serve as drainage and irrigation channels, and provide very cheap and convenient water transport and communication to the people. It is no doubt true that a large number of the smaller streams nearly dries up after the advent of the cold weather ; but they all remain navigable for a considerable part of the year, from the middle of June to the end of October. During these four and a half months they constitute the cheapest means of transport, and by far the largest amount of carrying business, particularly with regard to heavy and bulky goods, takes place in this period. The larger rivers, on the other hand, do not suffer from any such handicap ; they remain navigable throughout the year by large country boats and even by river steamers.

Functions of the river system.

Abundant supply of fish.

Drainage and irrigation channels.

Cheap and convenient transport.

The function of the rivers does not, however, end with supplying fish, serving as drainage and irrigation channels, and providing cheap and convenient water transport. They also act as an excellent natural

Natural manuring of the land during the annual flood.

fertilising agent over a considerable part of the province. With the break of the monsoon in the latter part of June, they begin to rise, the current acquires great rapidity and force, and brings down with it a large quantity of silt. Such an enormous volume of water rolls down these rivers that in the lower reaches of the Ganges, the Brahmaputra, and the Meghna, the entire country is flooded and looks like a vast sheet of water with isolated groups of homesteads floating here and there. As the water after overflowing the banks spreads far and wide over the fields bearing rice or jute crop, the current loses much of its force, and the silt with which it is laden settles on the bottom. In this way, every year during the flood season, the greater part of the land in East Bengal is enriched by the deposit of silt carried down by the rivers.

Another far-reaching result of the action of rivers.

This slow but continual deposit of silt by the rivers in Bengal has yet another far-reaching consequence. Indeed, it is believed that the present province is largely the result of the alluvial formation of land by the action of rivers. There was a time in geological history when the greater part of the present province formed the bottom of the sea which extended as far as the foot of the Garo and the Khasia hills.[1] As a result of the continuous process of depositing silt carried down in large quantities by the precipitous mountain streams, the sea was gradually pushed off towards the south and land emerged out of it. Even now, the same process is going on, although it is scarcely perceptible. Every year as silt is deposited on the lands which are

[1] Survey and Settlement Report of Mymensingh by Sachse, pp. 1—2. Cf. Panandikar's Wealth and Welfare of the Bengal Delta, p. 8.

flooded during the rains, their levels gradually rise ; thus most of the marshes and swamps which abound in different parts of the province are being slowly filled up.

Frequent changes in their course and their alluvial and diluvial action.

These rivers are very inconstant in the attachment for their beds, and they are never at rest with regard to their constructive and destructive work. The large quantity of silt with which they are usually laden is not wholly carried away to the flooded fields and to the sea, but is also deposited on their beds, causing the formation of sand banks and alluvial islands, called *chars*. This leads to a partial blocking of the free passage of the current, and, as a consequence, it tries to widen its channel by eating into one of its banks. The eroded bank supplies fresh material for the further deposit of silt, which either adds to the size of the old alluvial islands, or leads to the formation of newer ones. Thus, the process of alluvion and diluvion is constantly going on in the rivers, and, as a consequence, they are frequently changing their course. Often when the banks of a river are higher than the normal flood level, the silt is largely deposited on the bed which after a time becômes unequal to its task, and the river is then obliged to seek another channel for the discharge of its water. We have seen above that the Bhagirathy, the Jalangi, the Ichamati and the Mathabhanga have, each in turn, served as the main channel of the Ganges. The Brahmaputra has within recent memory diverted its main current from its old bed which lies across the Mymensingh district. Many of the rivers of Northern Bengal, particularly the Tista, are notorious for the frequent and violent changes in their course.[1]

[1] See Bengal District Gaz., Rangpur, p. 5.

Configuration.

As regards configuration, Bengal is, for the greater part, a level plain. Out of a total area of 82 thousand square miles, less than 12 thousand is hilly or mountainous. This hilly region mainly comprises the Darjeeling district in the extreme north and the Tripura State and the Chittagong Hill Tracts in the east. Apart from these distinctly hilly tracts lying in the north and the east, the country along the western border of the province, which touches the eastern fringe of the table-land of Chotanagpur, generally partakes of a rolling nature. The surface is broken by a succession of undulations which become more pronounced and sometimes develop into high ridges as one proceeds towards the west. On the top of these ridges, there is generally a growth of scrub jungle and forest which have partly been cleared. The rocky soil on the crest of these ridges is infertile and does not usually admit of any serious cultivation. But the intervening depressions, which receive the detritus washed away from the tops and the slopes by rain water, are generally rich and yield a good harvest of rice. On the slopes also, by means of terracing, rice is grown, the rain water being retained by small embankments. In an undulating country, the rain water drains off rapidly through the depressions and finds no time to percolate into the soil, which loses its moisture almost as soon as the shower is over. There is thus a greater dependence of the crops on regular and sufficient rainfall, or on artificial irrigation. The natural configuration of these regions, with alternate ridges and depressions, lends itself to a simple method of storing rain water by constructing embankments across the channels by which it drains off. The water thus stored, can be released later on, as need arises, and supplied by means of slow percolation to the fields that lie at a

Hilly tracts.

The undulating region in the west.

lower level. On the whole, the soil in this part of the province is poor, and the cultivator has to struggle hard to extract a living from it.

The Barind and the Madhupur Jungle.

Somewhat similar to this rolling country are the Barind which extends over a wide area in the districts of Rajshahi, Bogra, Dinajpur and Malda, and the tract known as the Madhupur Jungle in the confines of Dacca and Mymensingh. Both these tracts exhibit the same characteristics as regards the composition of the soil and the configuration of the surface. The soil is red, is extremely hard when it is dry, but becomes clayey as soon as it comes in contact with water. The level of these tracts is above that of the surrounding country, and there appear in both of them wild undulations with successive ridges and depressions. From an agricultural point of view, the depressions are much more valuable than the tops and the slopes of the ridges. In the Madhupur Jungle, the *baids*, as these long winding depressions are locally called, constitute practically the only cultivated area. The tops of the ridges are generally covered by a forest of *gazari* trees, a kind of bastard *sal*, which make fine posts for the ordinary thatched or corrugated iron houses in the surrounding country. The slopes, however, remain usually uncultivated, being covered by a kind of scrub jungle. Rice is the most important crop that is grown in this area ; but sometimes, other crops, such as mustard, pulses and jute, are raised. In the Barind, the jungle has been mostly cleared and cultivation has been extended practically over the entire area.[1] For the purpose of cultivation, the slopes have been terraced into a succession of small plots standing at different levels from the bottom. Speaking generally, the soil both

[1] Survey and Settlement Report of Rajshahi, p. 1.

in the Barind and in the Madhupur Jungle is of a poor character like that of the rolling country in the west of the province.

The greater part of the province consists of flat alluvial plains. This flat region may be divided into two parts: (1) the area in which the process of land formation has been completed;

With the exception of this comparatively small area where the surface of the land is more or less uneven, the rest of the province practically consists of flat alluvial plains extending in all directions. This area can broadly be divided into two parts. In the first, the process of land formation by the alluvial action of the rivers has been completed, and the level of the land is above that of the annual flood. It comprises that part of the Burdwan division which lies to the east of the rolling country, practically the whole of the Presidency division lying to the north of the Sunderbans, and a considerable portion of the Rajshahi division towards the north-west. Cultivation in these parts of the province entirely depends on timely and sufficient rainfall, or on artificial irrigation which is not resorted to except to a very limited extent.

(2) the area in which it is still going on.

The second part consists of the present delta of the three great rivers of the province—the Ganges, the Brahmaputra and the Meghna. It covers the whole of the Dacca division with the exception of the Madhupur Jungle tract, the two western districts of the Chittagong division and the south-eastern portion of the Rajshahi division, lying between the Padma and the Jamuna. Here the process of land formation has not been completed, and every year the country remains under water for about four months. Land is highly fertile, as it is annually enriched by the deposit of silt. During the period of flood, which usually lasts from the beginning of July to the end of October, the crops, both rice and jute, stand in the flood water, and are not, therefore, in need of rainfall or artificial irrigation. Cultivation in this

In this second part the country is annually flooded.

area is, thus, less dependent on rainfall than in other parts of the province, and irrigation by means of canals, wells or tanks is practically unknown. There is, however, one special danger to which the monsoon crops in this area are liable. When the advent of the flood is too early, or when the rise in its level in the initial stage is too sudden and rapid, the crops may be destroyed by being submerged by water. From this danger, however, the broadcast *aman* paddy is fairly immune. This particular variety of rice has a surprising capacity of coping with the rising level of the flood, and has been found to grow even a foot in the course of a single day in order to keep its head above the rising water. Even when it is entirely submerged by water, it will keep alive for about a week ; and if in the meantime the water subsides, it will recover from the effects of the flood without sustaining any serious damage.[1]

Agriculture is less dependent on rainfall.

The danger from the sudden rise of flood.

For a bountiful harvest, particularly of rice, both the advent and the subsidence of the flood should be timely and gradual. A sudden disappearance of the flood water, if it does not destroy the crop as a sudden rise in the early stage is apt to do, is yet harmful to it in so far as it hampers the normal and complete maturing of the plants. Thus, in this area, in determining the fate of the crop, the flood is at least as important as the rainfall. This comparatively low region, subject to annual inundation, includes the most important jute-growing districts of Bengal and constitutes the richest agricultural area in the province. It supports a population per square mile

For a bountiful harvest the advent and the subsidence of the flood should be gradual.

[1] These rice plants, though they grow very rapidly in order to protect themselves from the rising flood, lose much of this power of rapid growth so long as they remain completely under water.

which is hardly equalled by any agricultural tract of similar size in any part of the world.

Marshes and swamps.

A picture of the configuration of the province would remain incomplete without an account of the marshes and swamps with which it abounds. These marshes and swamps, generally known as *bils,* are found in most parts of the province, but they are specially numerous in the north-west of Backerganj and the south-west of Faridpur. The largest of these marshes in Bengal is the great Chalan *bil,* which lies partly in the district of Rajshahi and partly in Pabna. It is so vast that it covers an area of about 140 square miles.[1] These *bils* are generally connected with the rivers that flow in the region by means of watercourses, called *khals.* When the rivers are in flood, they are also filled with water which comes through the *khals.* There is thus an annual deposit of silt, which, together with decayed vegetable matter, is gradully filling them up. Although they are connected with rivers, the water in these marshes can not entirely drain away with the subsidence of the flood, for the reason that these connecting watercourses in their proximity to the rivers stand on a higher level than the depressions, and that owing to a comparatively greater deposit of silt, they have a tendency to shoal at or near their mouth.[2] Partly for these reasons, and partly for the

The great Chalan *bil.* These *bils* and marshes are slowly being filled up by the annual deposit of silt.

[1] The Chalan *bil* is rapidly being filled up by the deposit of silt. In 1909 it was found to have an area of 142 sq. miles, of which only 33 sq. miles remained under water all the year round. In 1913 the area covered by water throughout the year was found to have diminished to something between 12 and 15 sq. miles. See Bengal District Gaz., Pabna, p. 6. The Survey and Settlement Report of Rajshahi states that this area is only 10 sq. miles.

[2] Survey and Settlement Report of Faridpur, p. 3.

fact that these watercourses branch off from the mother stream not exactly from its bottom but from points much higher up in their sides, the flood water cannot find its way into the marshes, until the rise in its level is sufficiently high. This obstacle to the inflow and outflow of water at the mouth takes away a considerable part of their value as means of filling up the depressions by the deposit of silt, and what is more important, as channels for draining away the country.[1] As the dry weather proceeds on, the water that remains in these depressions after the subsidence of the flood, begins to evaporate ; and the water area continues to shrink, until, in the case of those which are small and shallow, even the bottom is dried up.

Probable causes of the existence of these *bils* and marshes.

The existence of these depressions in the province is due to a number of causes. In the first place, the alluvial action of rivers is responsible for a large number of them. The silt that is carried by these rivers during the flood season is not distributed evenly on the country around. The regions along the banks receive a greater deposit than those lying away from them, and, as a consequence, the level of the former becomes higher than that of the latter, thus giving rise to depressions. Often when the vagary of the current causes a river to change its course, the deserted old bed forms a depression. Sometimes they are the direct result of earth movement. In those marshes which are so numerous in the north of the Backerganj district, old coins and masonry foundations of *ghats* and buildings have often been discovered. This fact clearly proves that in some past age these marshes contained human

[1] Survey and Settlement Report of Faridpur, p. 3. Cf. Panandikar, Wealth and Welfare of the Bengal Delta, p. 11.

habitations and were far different from what they are at the present time. There is also more direct evidence in the old records of certain families on the border of the Faridpur district that towards the close of the 18th century, land under cultivation subsided into marshes as a result of earthquake.[1]

The Sunderbans.

There is still another extensive tract in the province which calls for a separate mention. This is the Sunderbans—a vast swampy region along the sea coast, extending from the estuary of the Hooghly in the west to that of the Meghna in the east. It has a total area of 6526 sq. miles, out of which, 2688 sq. miles lie in Khulna, 2941 sq. miles in 24-Parganas, and the remaining 897 sq. miles in the district of Backerganj.[2] The process of land formation by the alluvial action of rivers is still going on here. It is intersected by an almost unlimited number of estuaries, rivers, watercourses and creeks, which divide the entire tract into a large number of islands of various sizes and shapes. This flat swampy region is covered with a dense forest and is the favourite abode of numerous wild animals. That part of it which lies in Backerganj has mostly been reclaimed and cultivation has in many places extended right up to the sea coast ; but in Khulna and 24-Parganas reclamation has been comparatively small and has been confined to the north. The inhospitable nature of the country renders the task of reclamation an extremely difficult and dangerous one. The cultivator who intends to bring any plot of land under the plough has to fight with many foes and has to work under various handicaps. In the first place, there is dense and persistent jungle which he has to clear.

Difficulties of reclamation.

1 See Survey and Settlement Report of Backerganj, p. 5.
2 Bengal District Gaz., Khulna, p. 193.

Then he has to throw embankment across the water-courses and around his field, so as to keep out the salt water. When this has been done and the land has been actually brought under cultivation, he has to protect his crops from such wild animals as pigs and deer. Even when he has succeeded in doing all this, there are other dangers of a more serious nature that await him. He and his family may fall victims to the fever so prevalent in this region. Lastly, any day a tiger may suddenly make its appearance and carry away the cultivator himself, some member of his family, or some of his cattle.

Rainfall is fairly sufficient and regular.

In respect of rainfall, Bengal is more fortunate than most of the other Indian provinces. In fact, with the exception of Assam and Burma, there is no other province where the rainfall is so abundant and well distributed. As in many other parts of India, the rainfall in Bengal is largely brought about by the south-west monsoon. This current of sea wind begins to acquire strength in the latter part of May, and by the middle of June it attains its maximum force. Flowing in a north-easterly direction, it is first diverted from its normal course, to the north, by the mountain ranges in the western part of Burma. Then in its northerly movement it is again checked and turned westward by the Himalayan range. As it passes over the province, being diverted more than once from its course, this moisture-laden sea wind gives copious rainfall in those parts of it which lie near its route. With the advent of September it begins to lose its strength, causing a perceptible diminution in rainfall. By the end of October the monsoon ceases altogether to have any influence on the rainfall in the province.

It is caused mainly by the monsoon.

The annual rainfall in the province is somewhat

above 75 inches. Its distribution over the year is as given in the following table:—

Distribution of rainfall over the year.

Rainfall in Bengal in the different months of the year (in inches).[1]

Jan.	·3	July	15·4
Feb.	·9	Aug.	14·6
March	1·6	Sept.	10·9
April	3·3	Oct.	5·0
May	7·6	Nov.	·8
June	14·6	Dec.	·1

It will be clear from the above figures that the rainfall perceptibly increases in May, the month in which the monsoon begins to acquire strength. It is very heavy in June, July and August, and it is during these three months that the monsoon blows with full force. Again, from September the rainfall begins to diminish and, as it has been stated, the monsoon also becomes weaker about this time. From after October the rainfall is practically insignificant and the monsoon also ceases to blow by about that time. We thus see that there is a very close correspondence between the south-west monsoon and the distribution of rainfall over the year in Bengal.

Its distribution over the various districts.

We have seen above that the conditions relating to monsoon differ in different parts of the province and, as a consequence, the amount of rainfall varies considerably from one part to another. The following table gives the normal rainfall in the year, in the various districts of the province:—

[1] These figures have been calculated by me from the statistics of rainfall in the different districts of the province.

Annual rainfall in the districts of Bengal.

District.	Inches.	District.	Inches
24-Parganas	63	Midnapore	60
Khulnâ	72	Bankura	53
Backerganj	91	Burdwan	55
Faridpur	73	Birbhum	56
Dacca	74	Howrah	60
Mymensingh	86	Hooghly	57
Tippera	82	Jessore	62
Noakhali	114	Nadia	54
Chittagong	113	Murshidabad	55
Chittagong H. T.	99	Pabna	59
Darjeeling	122	Bogra	63
Jalpaigury	143	Rajshahi	58
Dinajpur	72	Malda	56
Rangpur	81		

We see from the above figures that the rainfall is generally heavy in the districts lying along the coast line and also in those in the eastern and northern part of the province. These are the regions which are near the course of the monsoon as it blows over the province. In the districts of Western Bengal, and also in those of Central Bengal, the rainfall is perceptibly smaller for the reason that they are away from the monsoon route. The rainfall in the western districts of the province is, however, due more to the frequent cyclonic disturbances in the north-western part of the Bay of Bengal than to the influence of the monsoon. These disturbances, as a rule, proceed towards the west, and as they pass over the western districts, they cause continuous and heavy rainfall often for several days at a time.[1]

Importance of the amount of rainfall &

The amount of rainfall and its distribution over the year are highly important in determining the fortune of the crops and therefore the prosperity of the agricultural classes

[1] Imperial Gazetteer of India, Bengal, Vol. I, p. 13.

of its distribution over the year.

in Bengal. Although we have seen that in the flood area the cultivator is less dependent on it than in other parts of the province, this immunity is enjoyed by him only during the period of the flood. At other times he is as much dependent on it as his fellow in the regions not subject to the flood. Early in March the cultivator in this flood area becomes anxious for the spring showers without which it becomes difficult for him to prepare the ground for the sowing of jute and other autumn crops, the soil being caked hard during the dry months of the cold weather. When the field has been prepared, the sowing of low-land jute begins, which is followed by that of *aus* paddy, and of jute on lands standing on a higher level, in April. In June the sowing of broadcast *aman* paddy takes place. We thus see that from the month of March until the appearance of the flood, rain at intervals is necessary both for facilitating the preparation of the land and also for the growth of these various kinds of crops. It is only when the flood comes in that the cultivator ceases to depend on the mercy of the heaven. After the subsidence of the flood he becomes again dependent on rainfall, though to a much less extent. In the latter part of October and in the beginning of November, that is, in the period between the subsidence of the flood water and the flowering of the *aman* paddy, one or two heavy showers are required for a complete maturing of the plants and for obtaining a rich harvest. A few showers of rain in the latter part of January or in the beginning of February are also very beneficial to the spring crops. In those parts of the province which are above the flood level, the cultivator has to depend on rainfall throughout the year for the supply of moisture to his land. The most important crop in this area is the transplanted

aman paddy, and transplantation cannot be done unless the field is covered by a few inches of water. The presence of water on the field is also necessary for a healthy growth of the plants after they are transplanted. This is generally obtained by conserving the rain water by means of small embankments round the fields.

CHAPTER II

CROPS AND THEIR PRODUCTION

Rice is the most important crop.

Its production is encouraged by natural facilities as well as by the internal demand.

Of the various agricultural products raised in Bengal, by far the most important is rice. The production of this crop is encouraged by the physical conditions of the province as well as by the direct dependence of the people on it for the satisfaction of the most urgent and important of their economic wants. Unlike wheat and other food crops grown in India, rice is an almost aquatic plant, and the first condition of its successful production is an abundant supply of water in which it can stand partly submerged during the period of its growth. This supply of water to the rice fields is ensured in a large part of the province by the annual flood, while in those areas where the land is generally above the flood level, it is provided by rainfall which, as we have seen, is fairly heavy and regular all over Bengal. Rice also constitutes the staple food of the Bengalis. From time immemorial they have been accustomed to consume it as their principal daily food, and they have naturally developed a strong liking for it. Except on rare occasions, the average Bengali does not take wheat, either in the form of white flour, or in that of the brownish *attah* which is more popular in India. The follow-

ing table gives the area under the more important crops in Bengal:—

Distribution of the cultivated area among different crops.

Area sown with various crops in the year ending 30th June, 1926.[1]

Crops.	Area (in thousand acres).
Rice	21,133
Wheat	130
Barley	86
Maize	78
Gram	135
Other food grains including pulses	933
Linseed	133
Sesamum (til)	152
Rape and mustard	731
Castor	34
Condiments and spices	151
Sugar-cane	215
Cotton	59
Jute	2,523
Tea	187
Tobacco	293
Fodder crops	96
Fruits and vegetables	701
Total under all crops	28,303
Area sown twice	4,462
Total net area sown	23,841

We see from the above figures that the total gross area under all crops in the province is 28·3 million acres, out of which 4·4 million acres are double-cropped, so that the total net area sown is somewhat less than 24 million acres. Of this, rice alone accounts for 21 million acres. There is no

[1] Agricultural Statistics of Bengal, 1925-26.

other province in India, and indeed there is no other country in the world, with the possible exception of China, where the area under rice cultivation is so large as that in Bengal.

Three broad classes of rice—*aman*, *aus* and *boro*.

There is an almost endless variety of rice grown in this province. These different varieties have been divided into three broad classes according to the season in which they are harvested—*aman* or winter rice, *aus* or autumn rice, and *boro* or summer rice. Of these, *aman* or winter rice is by far the most important. The following figures give the total area under each of these three kinds of rice in Bengal[1]:—

Variety of rice.	Average annual area sown in the period 1921-22 to 1925-26.	Percentage of the total area under rice.
Aman ...	... 15·58 million acres	74%
Aus ...	... 5·14 ,, ,,	24%
Boro ...	... ·40 ,, ,,	2%

Their relative importance.

It will be seen from the figures given above that *boro*, as compared with the other two kinds, is of very small significance, occupying only 2% of the entire area under rice. As regards the other two varieties which together account for the remaining 98%, *aman* is about three times as important as *aus*.

Aman paddy may again be divided into two classes—transplanted and broadcast. *Boro* is always transplanted, while *aus* is generally sown broadcast. Sometimes *aus* and *aman* are sown broadcast together on the same field. In such a case, the *aus* which matures much earlier is reaped in July or August, while the *aman* remains on the field until December when it is harvested.

1 Final Report on the Crops in Bengal, 1926-27.

Conditions suited to the production of different varieties.

Each of these different varieties of rice has its own characteristics and its suitability to the conditions of the land on which it is to be grown. There is a difference in the out-turn yielded by them: *boro* is more paying than *aus* or *aman*, while *aman* gives a better return than *aus*.[1] Again of the two kinds of *aman*, the yield of the transplanted is better both in quality and quantity than that of the broadcast. With a free choice, the cultivator, who is fully aware of the comparative advantages of these different varieties, would naturally grow only the best and the most profitable. But as a matter of fact, his choice in this matter is often limited, particularly in the area subject to the flood. The kind of rice a cultivator will grow depends largely on the level of the land and its condition with respect to the supply of water.

Boro.

Boro paddy, though its yield is the heaviest, is grown in a period in which the water required by the plants is not available except in the *bils*, marshes and low-lying *chars*. It is for this reason that its cultivation is practically confined to these areas. As regards transplanted *aman*, the principal consideration determining its cultivation on any particular land is the presence of a certain depth of water at the time of transplantation. There must be a few inches of water on the land when transplantation takes place, for unless the seedlings are partly submerged, they will not survive. On the other hand, if the depth of the water be greater than 9 or 10 inches, the land becomes unsuitable for transplantation, for then the seedlings will be too much under water. *Aman* paddy is transplanted in July and August, and therefore, in those fields

Aman.

[1] See Area and Yield of Principal Crops in India, 1924-25.

where such a convenient depth of water is available in that period, transplanted *aman* can be grown. On land where the depth of water is greater than this, *aus* may be cultivated. But in this case also, there is a limit. As *aus* paddy is harvested in July, and as the length of the *aus* stalk does not exceed four or five feet, it cannot be grown on land on which there is more than 2 or 3 feet of water at this time. On such land, broadcast *aman* can be raised, for this particular variety of rice can grow to a length of even 15 or 16 feet when it is in danger of being completely submerged by the flood water.

Aus.

It will be clear from above that the special obstacle to the cultivation of transplanted *aman*, arising from the presence of a greater depth of water on the field than is necessary, exists more in the flood regions than elsewhere. In West and North Bengal, where the land is generally above the flood level, and where the water for the rice plants is obtained by retaining rain water by means of small ridges or bunds on the borders of the fields, this difficulty does not, as a rule, exist and we find that in these parts of the province *aman* rice is generally transplanted. There is also a similar difficulty in the cultivation of *aus* rice in the area subject to the flood, but for the same reason, this difficulty does not exist in the regions free from it.

In land where *aus* is grown, broadcast *aman* also can be sown, but it does not flourish there as it does in deep water. *Aus*, however, has again its own advantage. It gives its return to the cultivator much earlier than *aman*, and at a time when he is really in need. Moreover, lands on which *aus* is grown generally yield a second crop in the year. Sometimes *aus* is succeeded by transplanted *aman*,

as is the practice in some parts of Noakhali and Tippera.[1] But more generally, it is followed in the winter by a *rabi* crop—rape, mustard or some kind of pulse.

Operations involved in the cultivation of rice.

The operations involved in the cultivation of rice are comparatively simple. Indeed, with a large holding, and with rice to grow on it, the life of a cultivator in Bengal, particularly in the area liable to the flood, seems to be fairly happy. Generally three or four ploughings at intervals are given to the land before sowing or transplantation, as the case may be. Each ploughing is followed by a harrowing, except in the case of the later ploughings for transplanted *aman*, where it can be dispensed with. Cultivators generally burn on the field the stubbles of the preceding crop and often the land is ploughed once along with the ashes early in February. It is allowed to remain in that condition until it is ploughed again in March, when the first spring showers fall. This process of keeping land in a ploughed condition for a period before sowing or transplantation promotes the fixation of atmospheric nitrogen in the soil. The cultivator does not really understand anything about nitrogen fixation ; nevertheless, he knows that if this is done, there is generally a better crop. Sowing begins in March in the case of *aus*, and towards the end of May or in the beginning of June in the case of broadcast *aman*. Weeding and thinning have to be done at intervals : *aus*, however, requires in this respect much less care than *aman*. Ordinarily, the cultivator gives one weeding and thinning to his *aus* crop, while he gives two or three to his *aman*. Sometimes when the weeds are comparatively few, and when the rice

Preparation of the land.

Sowing of *aus* and broadcast *aman*.

1 Settlement Reports of Noakhali and Tippera.

Weeding and thinning. plants are very young, he drags over his field a comb-like implement, called *anchra*. This loosens the earth, uproots many of the plants and weeds, and thus does the work of thinning and weeding at a very small cost.

Cultivation of transplanted *aman*. There is no need of weeding and thinning operations in a transplanted-*aman* field. As it is covered with water, no weed can, as a rule, grow ; and as the seedlings are transplanted in clumps of required number, and with just the suitable space between them, thinning also is unnecessary. The work of transplantation is, however, troublesome and involves much time. But once transplantation is made, there remains very little to be done by the cultivator until the crop becomes ready for harvesting in December or January. In those areas where the water in the rice land is not supplied by the flood but by rainfall, he has to see that the embankments by which the rain water is reserved remain all right. In the flood districts he is free from this trouble ; but in most of them there has appeared a pest in recent times which attacks his crops and inflicts considerable damage on them by its inroad. This is the water-hyacinth which has already become a serious menace to the agriculture as well as to the water transport and communication in a very large part of the province.

Preparation of nursery. The seedlings for transplanted *aman* crop are prepared in a separate nursery. The cultivator chooses for this purpose a small plot of land which retains its moisture until the seedlings are transplanted. He applies a good deal of manure in the form of cowdung, and, if necessary, artificial irrigation is resorted to in order to keep the seed-bed in a sufficiently wet condition. The seeds are sown very thickly, and, as a consequence, the seedlings, so long as they remain in the nursery, grow very

slowly. Ordinarily, the seeds are sown in April or May and transplantation takes place in July or August. During this period of three months the seedlings do not grow to more than a cubit in height. The cultivator, as a rule, prepares his own seedlings ; but for transplantation in some parts of the province, as in the Noakhali islands, they are bought in the market. The hardiness possessed by these seedlings is remarkable. When they are thus bought and sold, several days often elapse between the time they are taken out of their bed and that of their actual transplantation.

Cultivation of *boro* paddy.

The natural home of *boro* paddy is in the *bils* and marshes, where no cultivation is possible except in the dry weather, owing to the presence of too great a depth of water. The period in which it is grown has no rainfall, and so the moisture needed by the plants is secured by transplanting them in *bils* and marshes when the water with which they are covered comes down to the required level. The nursery is prepared in September and October, and the seedlings remain there for about a month and a half. No ploughing is ordinarily necessary, but in the district of Mymensingh which alone accounts for nearly half the total production of *boro* rice in Bengal, the usual practice is to plough the land once immediately before transplantation. As the land is covered with mud and water, the ploughman and his cattle have to stagger through them with considerable difficulty. Transplantation begins from the edges of the *bil* in November and December, when the water is sufficiently shallow there for this purpose. With the advance of the cold weather as the *bil* begins to dry up and the water line recedes, transplantation also progresses towards the centre. The receding water is retained in the transplanted

area by a succession of small bunds constructed at different levels on the sloping bottom. When after some time this water also dries up, it often becomes necessary for the cultivator to take resort to artificial irrigation. This is done by raising the water in the central portion of the *bil* by means of an implement, called *done.*

Importance of jute.

After rice, jute is the most important crop in Bengal. The area occupied by it, according to the table given above, is 2,523 thousand acres. It will be seen, however, that from the point of view of the area sown, its importance is only about ⅛th of that of rice. This latter crop is produced all over Bengal and in every individual district it occupies by far the largest area. Jute is not such a universal crop in the province. Three of the districts, Birbhum, Bankura and Chittagong Hill Tracts, do not produce it at all, while there are others, such as Burdwan, Darjeeling and Chittagong, which produce such a small quantity that for all practical purposes it may be neglected.[1] The following table gives the area under its cultivation in the more important jute-growing districts of the province[2] :—

The principal jute-growing districts.

Mymensingh	... ...	559 thousand acres.
Tippera	... ...	303 ,, ,,
Dacca	... ...	295 ,, ,,
Rangpur	... ...	270 ,, ,,
Faridpur	... ...	238 ,, ,,
Pabna	... ...	136 ,, ,,
Total for these 6 districts	...	1,801 ,, ,,

We see that of the total area of 2½ million acres under the production of jute, 1·8 million acres or 72%

1 Agricultural Statistics of Bengal for the year 1925-26.
2 Ibid.

are contributed by 6 out of the 27 districts of the province. It is also clear from the figures given above that Mymensingh is far ahead of the other districts in the production of jute, as in that of *boro* rice.

The cultivation of jute involves a much greater strain on the farmer than that of rice. The land has to be ploughed and harrowed much more thoroughly than in the case of rice, and the clods of earth have to be broken in such a way that the surface becomes almost a smooth one. Sowing begins towards the end of February and continues upto the end of March. There are several varieties of jute which may broadly be divided into two classes. One is suitable for the low lands subject to the annual flood, while the other can be grown on comparatively high lands above the flood level. The production of the crop on this latter class of lands is an expensive thing and cannot be carried on from year to year without a liberal application of manure. On the other hand, it can be grown on the low lands every year without such use of manure, because these lands are naturally fertilised during the flood by the deposit of silt. The low-land varieties of jute will flourish even when they are partly submerged by water ; but if it covers more than half of the plants, their growth is arrested and they begin to die. Sowing on the lands subject to the flood depends on their level. It has to be made at such a time that the plants become mature and are ready for reaping before the level of the flood is too high for them. Normally, the plants require a period of about five months to mature, so that if the reaping has to be done in July, the sowing will have to be made in February. When the plants grow to a height of 3 or 4 inches, thinning, weeding

Cultivation of jute.

Preparation of the land.

Sowing.

Weeding and thinning. and loosening of the earth become necessary, and from this time for about two months these operations have to be repeated almost once in every fortnight. As the land is very thoroughly prepared before sowing, weeds are comparatively few, at least in the early stage. The operations of thinning, weeding and loosening of the earth are performed by hand with the help of a small implement, called *nirani*. Considerable attention has to be paid to the work of thinning, for if the plants are too close to one another, they cannot sufficiently develop and the yield is unsatisfactory, while if there is too much space between them, they open out branches with the result that the quality of the fibre becomes inferior. In the period of their rapid growth the young jute plants require rain at short intervals and they thrive most when each heavy shower is followed by a period of strong sun and high wind. The final thinning is made towards the end of June when the plants have attained a height of about four feet. The plants that are taken out at the time of earlier thinnings are given by the cultivator to his cattle and are also consumed to a certain extent by his family as vegetable. But at the time of this final thinning they attain a certain degree of maturity, and so the fibre is extracted from them. It is no doubt weak and of very poor quality, but nevertheless, it has a price in the market. The cultivator thus obtains a better return by utilising the plants in this way than by giving them to his cattle.

Cutting. Cutting of jute plants takes place in July and August. There are mainly two considerations which are important in determining the time when it should be done. In the first place, the plants at the time of cutting should have attained a certain stage in their maturity. If the cutting is too early,

the fibre becomes weak and short, and the yield also is unsatisfactory. On the other hand, if it is too late, the fibre becomes too coarse and the bark persistently adheres to it, especially in the lower part. The other consideration is that at the time of cutting, there must be sufficient water for the retting process. This cannot be done in the flood area before the flood water has entered and sufficiently filled up the *khals* with which the country is interlaced. In those parts of the province, where the flood water is not available for this purpose, retting takes place in the pools which are formed here and there by heavy rainfall and, therefore, cannot be done before July and August when the rainfall becomes heavy. Cutting of jute in the flood districts which, as we have seen, constitute the most important jute-growing area in the province, is an extremely difficult work. Often the water in the jute field is 3 or 4 feet deep, so that the reaper has not only to stand in water for hours together, but has also to dive into it every minute or two so as to be able to reach the foot of the plants with his sickle.

Retting.

When cutting is over, the jute plants are tied up in bundles. These bundles are then arranged like rafts and steeped in water in the nearest *khal* or pool for about a fortnight. This is called retting and is necessary for the decomposition of the bark without which the fibre contained in it cannot be extracted. The colour and quality of the fibre largely depends on this process of retting. For if there is insufficient retting, the bark will partly adhere to the fibres which will stick together, while if the plants are kept under water for a longer period than is necessary, the fibres will easily break and lose their natural fine lustre. For plants which are cut in a premature condition, the process of

retting should be shorter than for those which are cut at a more mature stage. The water in which retting is done has also its influence on the colour of the fibre. Muddy water has an injurious effect in so far as it tends to impart a dull colour to it. After retting, the bundles are brought out of water and the bark is stripped out of the stick by hand. Stripping is a simple operation and is generally done by the women and the children of the cultivator's family. When the amount of work is too large [illegible], outsiders are employed and they usually [illegible] as their remuneration the sticks obtained as [illegible]oduct. The fibre is then extracted from [illegible] by beating it on the surface of water and by washing it quite thoroughly. It is highly important that this final process of washing should be done in clear water, otherwise, the fibre will not attain its bright colour. The jute is then dried in the sun and made into small bundles for the purpose of marketing.

Stripping.

Washing.

A limited but real competition between jute and rice for land.

A good deal of the land on which rice is grown can also be used for the cultivation of jute. There is thus a limited but real competition for land between the two crops in Bengal. A high price of jute in one year stimulates its cultivation in the following year. Thus the unusually high price of the product prevailing in the year 1925 led to an increase in its production in 1926, and in most of the jute-growing districts the cultivation of both *aus* and *aman* rice suffered to a considerable extent. Jute brings a better price to the cultivator than rice, and its yield also is heavier. The average harvest price of cleaned winter rice and of jute per maund in the period from 1920-21 to 1924-25 was

Rs. 5-15-0 and Rs. 8-9-0 respectively.[1] Their normal yield per acre is 1029 lbs. for rice and 1330 lbs. for jute.[2] It is thus clear that the gross income from the cultivation of jute is considerably higher than that from rice. This does not, however, mean that the net profit from jute is correspondingly higher than that from rice, for, as we have seen, the cultivation of the former involves a much higher cost than that of the latter. There is also the fact that the price of jute, unlike that of rice, is subject to frequent and violent fluctuations. This brings an element of uncertainty and risk over the production of jute, and for this reason, a large proportion of the cultivators in the jute-growing area is unwilling to grow it except to a limited extent.

Cultivation of rice does not seem to have suffered for the production of jute since 1904.

There is a wide-spread notion in this province that the cultivation of rice has been steadily suffering on account of the increasing production of jute. This view does not, however, seem to be justified by the available statistical information on the matter. Previous to the year 1911, the area under jute crop in Bengal is published not separately but together with that in Bihar and Orissa. It should be noted here that Bihar and Orissa is a very small producer of jute, as compared with Bengal, and, therefore, its inclusion does not materially affect the position of the latter province. The following table gives the total area in Bengal and Bihar and Orissa under the cultivation of jute in the two periods 1904-8 and 1922-26 :—

1 This is calculated from the harvest prices of these products in the period given in the Ag. S. I., 1924-25.

2 Area and Yield of Principal Crops in India, 1924-25, page 12.

Area under Jute in Bengal and Bihar and Orissa.[1]

Year.	Million acres.	Year.	Million acres.
1904	2·85	1922	1·68
1905	3·09	1923	2·61
1906	3·43	1924	2·59
1907	3·86	1925	2·94
1908	2·76	1926	3·41

If we take the average, the area becomes 3·19 million acres in the period 1904-8, as compared with 2·64 million acres in the period 1922-26. There is no reason to believe that the total acreage under jute in Bihar and Orissa was substantially greater before 1911 than after that year. From 1911 up to the present time, the area under jute in Bihar and Orissa has generally been considerably below three hundred thousand acres. Assuming that in the period from 1904 to 1908 there was on the average three hundred thousand acres under jute in that province, the average area under this crop in Bengal becomes 2·89 and 2·41 million acres in the periods 1904-8 and 1922-26 respectively. We thus see that the area under the cultivation of jute in Bengal has not increased from the year 1904. Nor has the cultivation of rice suffered any shrinkage from that time. The present area under this crop in Bengal is a little above 21 million acres. It was somewhat over 20 million acres in the period from 1911-12 to 1914-15.[2] Prior to 1911-12 comparison becomes difficult for the reason that the area in Bengal is given together with that in Bihar and Orissa and even Assam. The figure for 1904-5 does not, however, include Assam, and is for Bengal and Bihar and Orissa

[1] See Area and Yield of Principal Crops in India for the periods.

[2] See Area and Yield of Principal Crops in India for the periods.

only. This is 38·35 million acres. In Bihar and Orissa there were in 1911-12, 17·3 million acres of land under the cultivation of rice. There is no reason to believe that the area under this crop in Bihar and Orissa in 1904-5 was substantially lower than what it was about the year 1911-12. Assuming that it was 17 million acres in 1904-5, the area under rice in Bengal in that year becomes 21·3 million acres. It thus seems clear that for the last 20 years or so, rice has been successfully holding its own against jute in the competition for land in Bengal.

Mustard and its cultivation.

Next in importance to jute, is mustard, the area under which crop in Bengal is 731 thousand acres, according to the table given above. This oil seed has a large demand within the province. The oil produced from it is used in cooking by practically every Bengali family and is thus a thing of daily necessity to it. Mustard is grown to a large extent as a second crop on land which has already yielded *aus* paddy or jute. It has two varieties, rape and mustard, which are locally called *rai* and *sarisha*.

The cultivation of mustard involves comparatively small cost to the producer. As soon as the rains cease, or the flood water subsides in the flood area, the land is ploughed and harrowed once or twice and the seed is sown broadcast in November. No thinning is required, and as it is a cold weather crop, and as there is very little rain in this season, weeds also do not grow. Rain is not necessary, but one or two moderate showers in January make for a bountiful crop. Harvesting begins in the latter part of January and continues until the end of February. An acre of land yields normally 6 maunds of mustard which can easily be sold at Rs. 7-8-0 per maund at the present time. Taking the cost of

cultivation to be Rs. 10 per acre, there is a profit of about Rs. 35 per acre from the production of this crop. It should be remembered in this connection that mustard is generally grown as a subsidiary crop on lands which have already yielded *aus* rice or jute.

Pulses.

Pulses occupy an area of more than seven hundred thousand acres in Bengal. These are gram, *mung, musari, matar, khesari* and *mash kalai*—all grown in the cold weather. They enter into the diet of the people to a considerable extent all over the province, and, with the growing scarcity of fish, are attaining increasing importance. The cultivation of pulses, like that of mustard, is a comparatively simple and inexpensive thing. With the subsidence of the flood water in the flood area, and with the cessation of rain in other parts, the land is ploughed once and the seeds are sown broadcast. When this is done, the only thing the cultivator has to do is to harvest the crop as it matures, no intermediate operation of thinning or weeding being necessary. Most of these pulses are also grown as a subsidiary crop on land which has also been employed for the production of some more important crop in the course of the year.

Sugar-cane.

There remain two other crops which deserve our consideration. These are sugar-cane and tobacco. Compared with the other provinces, however, Bengal is not a very large producer of sugar-cane. The total area under sugar-cane in this province in 1924 was only 206 thousand acres, while the corresponding area in the same year was 1,300,000 acres in the United Provinces, 396,000 acres in the Punjab, and 289,000 acres in Bihar and Orissa.[1] We thus see that in the cultivation of

[1] See Area and Yield of Principal Crops in India, 1924.

sugar-cane Bengal stands fourth among the Indian provinces. Sugar-cane is a transplanted crop and so seedlings have to be prepared in a nursery. For this purpose the tops of the canes, containing little sugar, are used. These tops are cut into smaller pieces, each with two knots, and are then placed on the seed-bed very close to one another. The cultivator applies a good deal of cow-dung and ashes to the nursery when he prepares it, and keeps it well watered after the cuttings are placed. In North Bengal and parts of Central Bengal, cultivators do not prepare seedlings in a separate nursery but plant out the cuttings of sugar-cane directly in the field. Transplantation usually begins in February and continues in many parts of the province until the middle of April. The land on which sugar-cane is to be grown requires to be prepared very thoroughly with the application of large quantities of manure. The kind of manure used is not, however, the same in different parts of the province. In East Bengal the cultivator often gives a thick dressing of mud and earth obtained from the bed of old tanks and ditches. Cow-dung is very liberally applied in most parts of the province, while in some districts oilcake also is used to a considerable extent. The seedlings are usually transplanted in parallel trenches, ordinarily 6 inches deep and about 18 inches apart, with intervening ridges between them. After transplantation the seedlings stand in need of water, and if there is no rain, artificial irrigation becomes necessary. This is ordinarily done by drawing water from the nearest tank or well. When the plants are about three feet high, earth is drawn to them from the ridges on the side of the trenches, and this

It is a transplanted crop.

Nursery.

Manure used in sugar-cane cultivation.

Irrigation sometimes needed.

25. The area in Bengal in 1925-26 was 215 thousand acres. See Agricultural Statistics of Bengal, 1925-26.

Earthing up.

process is repeated after some time when the plants have made further progress in their growth. In this way the trenches are filled up and are eventually converted into ridges on which the canes grow. When the canes are about five feet high the cultivator in some parts of the province performs the operation of 'trashing'. This consists in exposing the stem of the cane to sun-shine and air by stripping the dead leaves from it. The operation of 'trashing' tends to appreciably increase the sugar content of the cane and also prevents the growth of insect pests. In those districts where the crop is liable to depredations by wild animals, such as jackals and pigs, 'trashing' cannot be done. On the other hand, it is necessary to wrap the leaves round the stems so as to protect them from the attack of these animals.

'Trashing' and other operations.

Cutting.

The crop becomes mature for cutting in about 10 months after transplantation. In the case of flowering varieties, the appearance of the flower is the sign that the crop is ready for harvesting. With non-flowering varieties this is indicated by the withering of the top leaves. The tops of the plants are usually sold and thus bring some return to the cultivator, while a part may also be retained by him for the purpose of making seedlings for the next year's crop. In most parts of Bengal sugar-cane is not grown on the same land for two or more successive years. But in certain districts of East Bengal, as in Dacca, a sugar-cane field often continues to grow the same crop in the second year also. This time no new transplantation is made, except to a small extent for filling up vacancies. When the first year's crop is harvested, the field is not ploughed but is allowed to retain the stubbles and roots from which new shoots spring up. These shoots make the second year's crop. A thin dressing of

manure is given, and after the plants attain a certain degree of development, earthing is done. The second year's crop is not so good as that of the first year, but as the expenses are very much less, the cultivator often chooses to grow it.

Manufacture of *gur*.

In Bengal the cultivator who grows sugar-cane is generally the person who manufactures *gur* (raw sugar) out of it. The crushing machine and the boiling pan are obtained by hire. These things are supplied usually by Messrs. Renwick & Co. of Kustia. Some convenient open plot of land in the village is chosen for setting up the machine ; and there, all the cane-growers in the village bring their crops one after another and manufacture *gur*. A sugar-cane *khola,* as the place where the canes are crushed and the manufacture of *gur* is carried on is called, is a thing of considerable interest to the village folk. It becomes the rendezvous of the village people, both young and old. The children come there for chewing cane or to have a sip of the juice, while the old people resort to it for indulging in smoke and idle gossip.

Tobacco.

Tobacco occupies an area of 293 thousand acres, which is considerably greater than that under sugar-cane. Although it is produced to a certain extent in every district in Bengal, excepting Birbhum, the cultivation of the crop is mainly concentrated in the district of Rangpur. Of the total area under this crop in the whole province, 194 thousand acres or 66 per cent. are in that district alone. Jalpaigury comes as a distant second with 22 thousand acres. Tobacco is an expensive crop and requires manuring even more liberally than sugar-cane. The soil on which it flourishes most is sandy loam which ought to be well drained and rich in mineral matters.[1] It is also a transplanted crop like sugar-cane. The plot

Rangpur is the most important tobacco-growing district.

[1] See Handbook of Indian Agriculture by N. G. Mukherjee, p. 305.

of land on which the seed-bed is made is thoroughly prepared and richly manured with cow-dung and ashes. The seeds are sown in drills, rather thinly. The usual time of sowing for the nursery is in September.

Nursery.

When the seedlings begin to grow, they have for some time to be protected from the heat of the sun and from heavy rain, and at the same time watering is necessary after every two or three days. When they grow to 3 or 4 inches in about a month and a half, they become fit for transplantation. The land on which the crop is to be raised is manured with cow-dung and ashes and is ploughed 10 or 12 times during the months of September and October, and before it finally becomes fit to receive the seedlings, the soil is thoroughly pulverised.

Trans-plantation.

Transplantation begins in October and continues until the middle of November. The seedlings are planted about two and a half feet apart in parallel rows which again have the same space between them. There are long narrow strips and cross strips of land between the rows of plants. In Rangpur, the cultivator draws a rake or a hand plough along these strips up and down the field, and then crosswise, for the purpose of keeping down the weeds and for stirring the surface soil. This process is repeated at intervals of two or three weeks while the plants are young.

Irrigation.

A tobacco field requires irrigation, and for this purpose, numerous temporary wells are sunk in the tobacco area in the district. A little before flowering time, the further growth of the plant is arrested by nipping off the centre and the side shoots and also the lower leaves. Only 8 or 9 leaves in the upper part of the plant are retained, the object of the pruning being to conserve all the sap for the development of the retained leaves. In the month of February, the leaves begin to change

from a green to a yellowish colour with brown spots, and become brittle. These are the signs that the time has come when the crop should be harvested. Harvesting is done in the morning almost as soon as the dew on the leaves is off. The leaves are then spread on the ground and allowed to wither in the sun, until they become sufficiently flexible for being handled without breaking. They are then tied in small bundles of 4 or 5 and suspended from poles in a hut which is well ventilated. In this state the leaves are kept for about two months in course of which they become dry and assume a light brown colour. They are then taken down and put up in larger bundles, called *peti*. In order to avoid the breaking of the leaves, a rainy day is chosen for this work. These bundles are then placed one upon another and arranged in such a way as to make a circular heap with the stems outward and the leaves spread flat inward. In this state they are kept for a period during which a certain amount of sweating and fermentation takes place. The tobacco then becomes ready for the market.

Maturing.

Harvesting.

Curing.

In the preceding few pages we have studied the production of the more important crops in Bengal. Though tea occupies a fairly large area, we have not considered it for the reason that it is a capitalistic and organised agricultural industry and, as such, entirely different from the production of other crops in the rural areas. Fruits and vegetables together cover an area of about seven hundred thousand acres but they are too numerous to be considered. Moreover, their methods of production are too divergent to be treated together as in the case of pulses. In conclusion, it is interesting to note that the area under fodder crops is only 96 thousand acres. This is very significant in view of the enormous number of cattle in the province and the great scarcity of grazing area in it.

CHAPTER III

STANDARD OF CULTIVATION

Having studied the production of the more important crops in the preceding chapter, we proceed now to consider in what respects the agricultural methods, as they are practised at the present time, are defective and stand in need of improvement. As agriculture is the direct means of support of more than three quarters of the population, the method of cultivation is one of the most important factors in determining the magnitude of the national dividend and, therefore, the condition of the great mass of the people. In our study of the physical characteristics of the province, we have seen that nature has been quite bountiful to the Bengal cultivator. The configuration of the surface, the character of the soil, the amount and the distribution of rainfall, are all favourable to him. The country is mostly a level plain with a fertile soil which yields a fair return to the comparatively small amount of labour spent on it. The rainfall almost all over the province is abundant and regular. The splendid river system supplements the work of the rainfall by supplying water to the rice fields during the annual flood, and, what is more important, acts as a natural fertilising agent over a considerable part of the province.

Importance of the method of cultivation.

Natural conditions are favourable.

But while nature has been so liberal and unstinted in its blessings, the part played by man is far from satisfactory. The methods of cultivation are mostly crude and unscientific and hardly mark any improvement on those which have been in vogue from time immemorial. Devoid of any education

Part played by man is unsatisfactory.

even of the most elementary character, the cultivator follows, as a matter of course, the customary methods without asking himself the question as to whether they can be improved in any way or not.

Implements.

His implements are few and simple and are generally made by the village smith and the carpenter in their stereotyped ways. The most important of these is the plough which consists of a wooden frame with a pointed iron share. It is the same primitive implement which has been employed by man in different parts of the world since he first took to agriculture. Ordinarily, it costs from Rs. 3 to 4 according to the kind of wood used, and its life does not normally extend beyond a period of five years. This crude implement has a number of defects in it. In the first place, it stirs the soil only up to a depth of 3 or 4 inches and is, therefore, unsuitable for deep ploughing. As there is no mould-board attached to it, it merely loosens the soil but does not overturn it. Thirdly, this plough, as it is drawn over the land, makes V-shaped furrows and consequently leaves ridges of unploughed land between them. Lastly, having no cutting parts, it does not eradicate the weeds.[1]

The plough.

Its defects.

It is sometimes said that this type of wooden plough, although crude in construction, is more suited to the conditions in many parts of the province than the modern iron plough.[2] For the poor animals that are usually employed in the cultivation of land, the modern iron plough would be too heavy an implement. In the area subject to the flood, the use of the iron plough would be distinctly dis-

[1] See N. G. Mukherjee, Handbook of Indian Agriculture, p. 95.

[2] See Wealth and Welfare of the Bengal Delta by Panandikar, p. 26.

advantageous in so far as, under the deep ploughing made by it, the beneficial effect of the thin deposit of silt would be lost by its being mixed up with too large a quantity of earth.[1] Again for the cultivation of rice, which is the main crop in the province, deep ploughing is unnecesasry and even likely to be harmful, as it would increase very much the water-absorbing power of the soil and thereby prevent the rain water from being accumulated on the surface of the rice field. Thus, the partial submersion of the rice plant in water would be a difficult thing in those parts of the province which are not liable to the flood.

Some arguments in favour of the plough used.

These arguments in favour of continuing the use of the present wooden plough do not seem to be very strong, although they possess some amount of plausibility. It may be said at the outset that there are several crops such as jute, sugar-cane, tobacco, for which deep ploughing is an essential thing. If shallow ploughing is suitable for the production of rice, this can be done by the improved ploughs much better than by the primitive implement which is now in use. There are several kinds of modern plough of which some are suited to deep ploughing, while others are intended for shallow ploughing. In the flood area ploughing of the land to a moderate depth is not likely to destroy the beneficial effects of the deposit of silt, as is feared. Moreover, if the deposit of silt is really mixed up with too large a quantity of earth when the iron plough is used, the proper course is to supplement it by cow-dung and other forms of manure. The whole thing depends on the pressure of the popula-

Not very cogent.

[1] See Wealth and Welfare of the Bengal Delta by Panandikar, p. 26.

tion on the soil and on the comparative advantages of the two courses. If every farmer in this province had as much land as he liked, there would be no need of intensive cultivation. But since this is not the case, and since the area of land held by the average farmer is very small, the problem is to raise as much produce from the land as is commercially possible. In these circumstances, if the amount of the produce can be sufficiently increased by the use of the improved modern plough, there is no reason why this should not be done, even though it involves additional outlay in the form of manure or stronger cattle.

The modern plough is not always too heavy for the cattle of the province. As a matter of fact, there are some types which are almost as light as the country plough that is now in use. The M. S. N. plough, as Dr. Clouston points out, is only 34 lbs. in weight.[1] There are other kinds which, though somewhat heavier, can very well be drawn by a pair of country bullocks, if only they are adequately fed. Nor is the price of the modern plough always prohibitive to the cultivator.[2] If he can buy a pair of bullocks for Rs. 100, he can also be expected to be able to spend Rs. 25 or 30 on the purchase of the most useful and important implement of cultivation. There is also the fact that in the long run an iron plough of this price will not be so expensive as it appears to be. For, apart from its greater efficiency, it is likely to last much longer than an ordinary wooden plough which has to be replaced in the course of 4 or 5 years. In respect of stirring the

[1] See Agricultural Journal of India, 1925, p. 170.

[2] The Meston plough was formerly sold at about Rs. 5; its price at the present time is about Rs. 20. Other kinds of plough can be had at somewhat higher prices.

soil and inverting it, the modern plough is greatly superior to the wooden plough that is now employed, and these are important advantages whether deep ploughing or shallow ploughing is required.

Other implements. Closely associated with the plough, is the harrow or *mai* which consists of two pieces of split bamboo joined together by cross bars like a ladder. It is also drawn by a pair of bullocks. The man who drives the bullocks stands on it, as it moves, in order to give the required weight. The harrow comes into use when ploughing is over, and performs a number of operations at the same time. It breaks the clods, levels the ground and clears the weeds. When ploughing has to be done on land which, owing to the absence of rain, is caked hard, the clods of earth upturned by the plough are often too hard and large to be broken by the harrow, and in such cases, this is done by means of a large wooden hammer, called *mugur,* after harrowing is over. Another implement used by the cultivator is the rake which is called *anchra* in some parts of the province, and *bida* in others. In appearance it resembles a large comb, and is made of a fairly heavy piece of wood about 4 feet long with iron spikes. The *bida* also performs a number of operations at the same time. When it is drawn over the field with the iron spikes penetrating into the ground, it stirs the soil, thins the plants, and does also the work of weeding to a certain extent. Its employment for these purposes is, however, limited by the fact that it is likely to break the plants by its weight when it is drawn over them, unless they are very pliant. For this reason, it cannot be used in a jute field. The rake is, however, invariably used in broadcast-paddy fields, for the plants, being very pliant, do not break when it passes over them.

The spade or *kodali* is used in the production of sugar-cane, tobacco, potato and other crops. If the plot of land is very small, or if its shape is very irregular, the cultivator has to use this implement instead of the plough. He does not know of any ridging or trenching plough, or of any improved hand implement used for these purposes, and so, when these operations have to be performed, his only resort is the spade. It is used for the earthing up of sugar-cane and banana plants, and for loosening the soil in the case of these crops. In general, it may be said that the weeding and loosening of earth in the case of all those crops which cannot stand the weight of the rake are done with the help of the spade, provided the space between the plants is sufficient to permit its use. Work by means of the spade is comparatively slow, and as it is done by human hand unassisted by bullocks or any other kind of motive power, it involves a great strain on the worker.

The weeding, thinning, and loosening of earth, in the case of some crops, can neither be done by the rake nor by the spade. The former cannot be used, because the plants will break, while the employment of the latter is not permitted by the space between them. In such cases, these operations are performed with a small hand implement, called *nirani*. Thus, in a jute field, which frequently requires weeding and thinning in the early stage, the cultivator takes the help of this implement. Another hand implement of considerable importance is the sickle which is everywhere used in the harvesting of crops.

Cheapness of the implements.

The only redeeming feature of these implements is that they are very cheap and are thus well within the limited means of the average cultivator. It has

been said above that the plough generally costs from Rs. 3 to 4. Altogether, the cost of a set of implements for a holding of 4 acres will not exceed Rs. 15. For a holding of this size, one plough, one harrow, one rake, three spades, three *niranis*, four sickles, and one *mugur* are considered by the cultivators to be necessary. The total cost of these different implements at the present time will be as given below:—

1 Plough	Rs.	3	8	0
1 Yoke	,,	0	4	0
1 Harrow	,,	0	12	0
1 Rake	,,	2	0	0
3 Spades	,,	3	12	0
3 *Niranis*	,,	0	12	0
4 Sickles	,,	2	0	0
1 Hammer	,,	0	8	0
TOTAL .	,,	13	8	0

Live-stock.

Like his implements, the live-stock of the cultivator also stand in need of improvement. The Bengal cattle are decidedly inferior to those of other Indian provinces. This may to some extent be due to climatic influences but is mainly the result of poor feeding and careless breeding of the animals.

Very poor.

It can be safely stated that by far the largest proportion of the cows and the bullocks of this province is insufficiently fed. In many parts of the province the area of pasture land is almost negligible, for the generally level nature of the country, combined with the great pressure of the population on the soil, has brought practically all available land under the plough. The production of fodder crops also is extremely inadequate for maintaining the cattle population. The total number of live-stock in the province is 32 million 337 thousand, of which about 25½ millions are of the bovine class, while the total area

under fodder crops is only about one hundred thousand acres.[1] The following table gives the number of live-stock of the bovine class per 100 acres of sown area in the more important provinces in India[2]:—

No. of cattle in relation to cultivated area in different provinces.

Province.	No. of cattle per 100 acres of sown area.
Madras	66
Bombay	34
Bengal	108
U. P.	88
Punjab	57
Bihar and Orissa	82
C. P. and Berar	47
Assam	97
Burma	37

It will be seen from the figures given above that Bengal is much ahead of the other provinces in respect of the density of the cattle population to the cultivated area. This is all the more significant when we remember that the area of grazing land in this province is considerably less than in most other provinces.

For the maintenance of his cattle the cultivator depends largely on the by-products of his land. Of these, the most important, from the point of view of quantity, is paddy straw. This he stores up to be used all the year round, particularly when green fodder of any kind is not available. In Western Bengal, the straw of the transplanted *aman* paddy, which makes good thatching material, is used to a considerable extent for making the roofs of culti-

Sources of the supply of fodder.

[1] See Agricultural Statistics of British India, 1924-25.
[2] *Ibid.*, p. vii.

4

vators' houses. Sometimes the cultivator grows fodder crops on his land, but the extent to which it is done, as indicated by the total area under these crops in the province, is very small. In the flood area, a kind of aquatic plant is grown in the ditches, but most of these ditches have been recently invaded by water-hyacinth, and, as a consequence, the production of this kind of fodder has been seriously curtailed. During the flood season, when there is a great scarcity of fodder in the flood area, water-hyacinth is sometimes used for this purpose ; but as a rule, the cattle do not like it. Moreover, if it is given to them continuously for a number of days, their system is undermined. For this reason, the cultivator, so long as he can avoid it, does not use water-hyacinth as fodder. When weeding and thinning are done, the weeds and the plants that are obtained are usually given to the cattle. In the process of husking rice carried on in practically every cultivator's house at least for domestic consumption, a kind of powder is obtained which forms a nourishing food for the cattle. With the exception of paddy straw which has a large supply and which can also be easily preserved, all these things are, however, not very important in respect of quantity. They are obtained now and then in small quantities and afford only temporary relief to the cultivator in his need of fodder. He has, therefore, to purchase from the market oilcakes and husks of pulses, a quantity of which he gives to his live-stock every day. On the whole, the supply of fodder in the province seems to be very insufficient for keeping the cattle in a proper and efficient condition.

Different kinds of

The total number of cattle (bovine) in the province, as already stated, is about 25½ millions. This

is divided amongst different classes in the following way[1] :— cattle and their number.

Oxen.		Buffaloes.	
Bulls	1·2 millions	Male buffaloes	·6 million
Bullocks ...	8·4 ,,	Cow ,, ...	·2 ,,
Cows	8·3 ,,	Young stock ...	·1 ,,
Young stock ...	6·3 ,,		

For the purpose of cultivation, the animal that is most commonly used in Bengal is the bullock. Bulls and cows are employed only in exceptional cases. The former are mainly reserved for breeding purposes, while the latter are intended for supplying milk. In some parts of the province, the buffalo is used in the cultivation of land, but the total number of these animals, as will be clear from the above figures, is very small, and they are also employed in drawing carts. A certain proportion of the bullocks also is used for this purpose and for supplying motive power in the oil-pressing industry carried on in the rural areas. Bullock is the animal commonly used in agriculture

Statistics of the actual number of cattle employed in cultivation are not available. But an idea about it may be formed from the number of ploughs. There are altogether 4·6 million ploughs in Bengal. As a plough is invariably drawn by two animals in the province, the employment of this number of ploughs would require the services of 9·2 million animals. This, however, leaves for drawing carts and for other purposes a less number of animals than is necessary ; but the explanation of this deficiency is that sometimes the same animal is used for cultivation as well as for drawing a cart, and that some of the cows which have ceased to reproduce are employed in the cultivation of land. Taking 9·2 Number of cattle employed in agriculture.

[1] Agricultural Statistics of British India, 1924-25.

millions as the total number of agricultural cattle, we can find out the average incidence of these animals on the cultivated area. As the total net area sown in the province is about 24 million acres, there is on the average a pair of animals for every 5⅓ acres of land. The position does not seem to be unsatisfactory from the point of view of number. The principal defect lies in the quality. What is really wanted in the interest of good cultivation is not an increase in the number of animals but an improvement in their strength and draught power.

The cow is even a poorer creature than the bullock. The quality of the bullock is to a certain extent maintained by the fact that every year a large number of these animals is imported from the annual fair at Hariharchatra, in Bihar. These animals, when they are just imported, are greatly superior to those which are locally bred ; and though, in course of time, they lose much of their former health, on the whole, they are stronger and capable of doing more work than the pure Bengal breed. No such infusion of fresh blood does generally take place in the case of the cow. It thus happens that the average quality of the cow is worse than that of the bullock. An idea of the poor character of the cow can be formed by the fact that in very frequent instances the maximum yield of milk in the lactation period is below 5lbs. a day.

The cow. As it has been indicated above, the cow is primarily intended for supplying milk. The cultivator obtains along with the milk the dung which he uses partly as manure and partly as fuel, and also the calf which, when mature, makes a bullock or a cow, as the case may be. The milk, when the cultivator can afford it, is consumed by his family, and when he cannot do so, is sold in the market and brings him

money. Thus though the cow is not directly a factor of agricultural production, it is, none the less, an animal of the highest national importance. As the mother of the future generation of bullocks, it largely determines their quality and character and is thus of very great significance to agriculture in the province. As the source of supplying milk, it is highly important in determining the health and strength of not only the agricultural but the entire population.

Breeding of cattle.

Little attention is paid by the cultivator to the breeding of his cattle. He does not even realise the value of a good bull. Ordinarily, a stud is maintained for a number of villages and the owners of cows, when need arises, bring them to it as a matter of course without caring to know anything about the pedigree of the bulls. There is also no serious competition in the business, and the owner of the stud in a particular area is almost sure of the demand that arises in it, whatever may be the type of the bulls maintained by him. In these circumstances, he has really no incentive to maintain pedigree bulls and his interest lies in supplying the services at the lowest possible cost.

No indication of selection.

There is also no indication of the practice of selection in the matter of breeding cattle. Almost every animal, however poor it may be, is allowed to breed and perpetuate its poor qualities. This is made possible by the fact that the average cow is maintained largely on the by-products of land and does not therefore involve any considerable special expense to the cultivator. The strong sentiment of the Hindus about the cow is also in a large measure responsible for the absence of any selection. The Hindu worships the cow and will in no case allow it to be slaughtered.

Use of manure is very limited.

The cultivator also does not properly realise the importance of fertilising his fields. The use of artificial fertilisers is almost unknown to him. In the flood area, where there is an annual deposit of silt, he does not ordinarily apply any manure and is content with the result that is obtained without it. The lands in this area seem to maintain their fertility in the natural course by the action of the flood, for their yield in proportion to area does not manifest any perceptible tendency towards diminution. In those parts of the province, where the land is above the flood level and is not thus naturally enriched by the deposit of silt, continued cultivation gradually leads to the exhaustion of the productive powers of the soil, and the cultivator feels the necessity of restoring the lost powers by the application of manures. There are several things which, as we have seen, are used for this purpose. Of these, the most important, both for its wide prevalence and its fertilising capacity, is the farm-yard manure. This natural manure is the cheapest thing available to the cultivator. It is largely obtained as a by-product from his cattle, and even when it has got to be purchased, it involves much less expense than any other kind of manure of equal fertilising property. We have also seen that in some parts of the province, the land is manured with the black earth and mud raised from the bed of old tanks and ditches. This earth consists mainly of decayed vegetable matter and is rich in fertilising property. It is applied to the field quite thickly so as to form a surface layer of almost three or four inches. The cultivator also uses oilcakes as a form of manure ; but as it involves expense, its use is limited to the more profitable crops, such as sugar-cane, tobacco and potato. Sometimes green manure, chiefly *dhaincha*, is applied, but this practice

Kinds of manure used.

is not very common. In those districts where water-hyacinth abounds in the time of the flood, it is also utilised to a certain extent as green manure. After jute or *aus* paddy is harvested, the field is covered by this luxuriant weed. When the water subsides, the cultivator, instead of taking the trouble of removing it from the field, ploughs the land with it when the *rabi* crop is about to be sown.

Rotation of crops. As regards the rotation of crops, the cultivator knows by long experience that the production of the same crop year after year on a plot of land tends to gradually deteriorate the productive powers, and this can be prevented by growing different crops in rotation. In reality, however, the extent to which rotation is practised in the province does not seem to be very considerable. This is indicated by the fact that, of the total cultivated area in the province, more than 87% is every year under rice crop alone. Although in the jute districts rice and jute are alternately grown on many fields, it cannot be denied that in the vast majority of cases, rice is produced on the same land year after year without any break. Some amount of rotation is also practised by the cultivation of subsidiary crops in the interval between two main crops. We have seen that the cold weather crops such as mustard, *mung, musari, khesari,* are usually grown on *aus* or jute fields after these crops are harvested. But this is also done to a comparatively small extent, for we find that, of the total cultivated area, only about 18% is sown more than once in the same year.

Some limits to rotation. In the flood area, the cultivator has not much scope in the choice of his crops so as to have a good system of rotation. As the land is mostly covered with water for about four months in the year, and as in other seasons rainfall is scarce and scanty,

rotation is possible only when there are some alternative crops which can grow in water. The only other suitable crop which satisfies this condition is jute. But here also the possibility of substitution is limited. Jute cannot be produced on land where broadcast *aman* is grown, on account of the presence of too great a depth of water.[1] Moreover, the demand for jute is much smaller than that for rice. It also seems to be of an inelastic character. If the production increases much beyond the present normal quantity, its price is likely to fall so much that it will hardly cover the expenses of cultivation.

Yield of crops as compared with that in foreign countries.

That the methods of cultivation are backward and defective is also indicated by a comparison of the out-turn per acre of the principal crops in this province with that in foreign countries. The average area under rice in Bengal in the period 1920-21 to 1024-25 was 21·1 million acres, and the total production was 8·3 million tons of rice per year during that period.[2] In Japan, which is an important rice-producing country, the area under this crop during the five years 1920-24 was on the average 7·7 million acres, while her annual production during this period was 10·3 million tons.[3] We thus see that though the area under the cultivation of rice in Japan is only about one-third of that in Bengal, she produces a much larger quantity than the latter does. The yield per acre is even greater in some of the European countries. To produce one ton of rice, the land required is about 2½ acres in Bengal, ¾ acre in

1 See Ch. II.

2 Area and Yield of Principal Crops in India, 1924-25. The average is calculated by me.

3 *Ibid.*

Japan, 7/12 acre in Italy, ⅔ acre in Spain.[1] Similarly, in the production of sugar-cane, the standard of yield is exceedingly low in Bengal as compared with that in other countries. The normal yield of sugar per acre is about 1⅓ tons in Bengal as against 2 tons in Cuba, 4 tons in Java, more than 4½ tons in Hawaii.[2] In the production of this crop, Bengal is even much behind some of the other Indian provinces. The normal yield per acre of raw sugar or *gur* is 6950 lbs. in Bombay, 6383 lbs. in Madras, while it is only 3004 lbs. in this province.[3] Comparison with foreign countries is not possible in the case of jute as this crop is not produced anywhere outside India. But from the methods of production we have studied in the preceding chapter, there is no reason to believe that the standard of cultivation of jute is appreciably higher than that of rice or sugar-cane.

Improvement of agriculture.

The backward methods of production and this low standard of out-turn clearly indicate that, under proper cultivation, the land can be made to yield a much larger return than it does at the present time. The first thing that is needed for this purpose is that the agricultural implements which are crude and inefficient should be improved. Farmers in foreign countries employ a good deal of agricultural machinery in addition to modern improved implements. The application of costly and specialised agricultural machinery by the ordinary cultivators is, however, a remote possibility in this province.

1 These are calculated from the figures given in the Area and Yield of Principal Crops in India, 1924-25.

2 See Howard, Crop Production in India, p. 123.

3 See Area and Yield of Principal Crops in India, 1925-26.

The average cultivator is too poor a man to be able to purchase it. Nevertheless, considerable improvement can be effected in this direction by the substitution of comparatively cheap implements of an improved character in the place of those that are actually in use at present. Some of these implements are within the means of the ordinary cultivators, and if production on a large scale is organised in the country, others may be brought within their reach. For the development of agriculture, it is highly desirable that the manufacture of improved agricultural implements should be undertaken within the country so as to suit the particular local conditions as well as the limited means of those from whom their demand is likely to come. The general poverty of the cultivators in this province, as in others, makes it highly important that these implements should be supplied at a sufficiently low price, for otherwise, they will not have a wide demand. This can only be done when their production is organised on a very large scale.

Implements and machinery.

Obstacles to their application.

The employment of specialised machinery and implements in agriculture is also limited by the small size of the agricultural holdings in the province. Even supposing that the average agriculturist is able to purchase them, it does not necessarily follow that he will do it. The profitable application of specialised machinery, whether in manufacture or in agriculture, depends on the possibility of keeping it sufficiently employed. The advantages of the large business over the small arise chiefly from this fact. The small producer can not afford to employ expensive and specialised machinery, not because he is always unable to purchase it, but for the reason that he cannot provide sufficient work for it. Agricultural holdings in this province are generally

so small that there is not much scope for the profitable employment of agricultural machinery and even of expensive agricultural implements.

In these circumstances, the profitable employment of expensive implements and machinery in the cultivation of land can take place to a certain extent through co-operation amongst cultivators. The difficulties about insufficiency of the means of purchasing them and inadequacy of the work to keep them fully employed are largely removed, when the resources of a group of cultivators are combined together in a system of co-operation, and when the work to be performed is provided not by a single person, but by the group of persons thus associated together. At present, however, there does not seem to be any indication that efforts are being directed towards the use of agricultural machinery and implements on a co-operative basis, and it is desirable that attempts should be made for the development of the co-operative movement along this line.

Employment through co-operation;

The use of expensive implements and machinery in agriculture can also be facilitated by the agency of middlemen supplying them to the cultivators on a system of hire. In some parts of Western India, the introduction of the iron plough has been brought about mainly through such private agency.[1] There are middlemen who purchase these ploughs in large numbers, hold them in stock, and hire them out to individual farmers on a moderate daily charge. Sometimes when the cultivator requires a plough for a longer period, he hires it for a month, in which case the charge becomes less. It is on this system of hire that the cane-crushing machine and the pan

through hire system.

[1] See Mann and Kantikar, Land and Labour in a Deccan village, p. 57.

for boiling the juice, which are required in the manufacture of raw sugar or *gur* in the rural area, are supplied in Bengal. It has been said that in this province the cultivator who grows sugar-cane is also the person who manufactures raw sugar from it. He can not afford to purchase a cane-crushing machine, because its price will be too high, and also for the reason that he requires it only for a few days in the whole year. It thus happens that practically every cultivator who produces sugar-cane and *gur* in Bengal obtains the pan and the crushing machine on hire.

Improvement of cattle.

In view of the smallness of the agricultural holdings, the possibility of the employment of mechanical power in agriculture is very limited in the province. It is almost certain that the bullock will continue to supply in the future, as it does at the present time, practically the whole of the draught power required in cultivation. Agricultural progress in Bengal is thus closely bound up with the improvement of cattle which, as we have seen, are of a very poor character. The first condition for bringing about an improvement in the standard of cattle is that the animals should be properly and adequately fed.

Proper feeding.

This requires that the supply of fodder should be increased. The grazing area in the province, owing to the pressure of the population on the soil, is comparatively very small, and there is no possibility of its being extended in the future. On the other hand, with the growth of population and the consequent increase in that pressure, it is almost certain that this area will further shrink as a result of an extension of cultivation.

For keeping the cattle in a better condition, it is essential that the cultivation of fodder crops in the province should be materially increased. At

the present time, we have seen that the area under all kinds of fodder crops is only about a hundred thousand acres. This is about ·4 per cent of the total cultivated area in the province. One of the reasons why the cultivator does not produce a larger quantity of fodder than he does at present is that he does not know any method of preserving green fooder in silos. When he grows some kind of green fodder on his field, it serves him only for a short time. He cannot begin to use it, unless it becomes somewhat mature, and he has to exhaust it all before it becomes too mature and dry. Often he has to use it up even earlier than that. For generally, he grows fodder as a catch crop in the interval between two successive main crops. This interval is often short and, therefore, the land has to be cleared and made ready for the next year's crop within a definite period. The cultivator thus grows on his land only that amount of green fodder which will be required by his cattle during this short period. But if he knows the method of preserving green fodder in silos, he can easily produce larger quantities and use the ensilage throughout the year like paddy straw.

Obstacles to increased production of fodder.

The necessity of preserving fodder in silos also arises from the fact that there are acute periods of fodder scarcity in the province, during which the cattle have mainly to subsist on paddy straw and a little quantity of oilcake. This scarcity generally occurs when, owing to the absence of rain, pasturage is not available, whilst green fodder also cannot be grown, because the land is either under preparation for other crops or is actually occupied by them. In the area subject to the flood, scarcity of fodder becomes serious also in the flood season when the greater part of the land surface is under water. These periodical difficulties in feeding his cattle would not

Necessity of preserving green fodder in silos.

Period of fodder scarcity.

exist if the cultivator knew how to preserve green fodder. He would then produce a larger quantity of fodder from his land when it was free from other crops and preserve it in silos so as to be used all round the year. There is a large scope for extending the production of fodder in the province. Of the total area of about 24 million acres under cultivation, only about 4½ million acres are double-cropped. The remaining 19½ million acres produce only one crop in the year and remain fallow for a number of months between the harvesting of one crop and the sowing of the next. In the winter-rice land on which ordinarily nothing is grown in this interval, with proper irrigation facilities, a second crop either of fodder or some kind of pulses can be easily grown. The main problem in increasing the supply of fodder in the province is to teach the cultivator how to make ensilage.

Scope for the increased cultivation of fodder crops.

This can only be done by means of actual demonstration, for unless proper attention is paid even to small details, the quality of the product may be far from satisfactory. It has also to be determined, with reference to the particular physical conditions of a place, which of the two forms of silos —the pit and the tower—is more suitable to it. For the purposes of the small cultivator, the pit silo is more convenient than the tower. While the quality of the silage kept in a properly constructed pit has been found in many parts of the country to be at least as good as that stored in a tower, the former has this advantage over the latter that it involves practically no initial outlay.[1] But if the soil is water-logged, as it is in many parts of Bengal, particularly

[1] Report of the Royal Commission on Agriculture in India, p. 207.

during the rainy season, silage cannot be kept in a pit, and the tower silo is more suitable.

A large supply of fodder, though essential in raising the standard of cattle, will not by itself attain the necessary improvement. There must at the same time take place a proper breeding of the animals. For this purpose, what is most important is that the cow should be mated with a bull of a good strain. At the present time there is a great scarcity of good stud bulls in the province, and those which are actually used for this purpose are generally of a poor type, and no body knows or cares to know anything about their qualities as a sire. The problem of supplying good breeding bulls in the vast rural areas is an enormous one, for the total number of cows requiring their services is no less than 8.3 millions in the province. Some of the District Boards keep one or two bulls, and the Agricultural Department of the Government has been trying to maintain a bull at each of the Government agricultural farms. Their service is lent free to the people of the neighbourhood. But the number of bulls thus kept by the District Boards and the agricultural farms is entirely insufficient for meeting the demand of the province.

Proper breeding.

The problem of supplying good bulls.

The problem of improving the breeding of the animals is broadly divided into two parts. The first consists in producing breeding bulls of a desirable type, and the second in distributing them over the rural areas where their service is required. It is believed that in this province, as in others, the breeding of bulls cannot be a directly remunerative business under present conditions, and so, if their supply is to be increased, this must be done by

Government farms.[1] No private initiative can be expected to undertake this work so long as there is no good prospect of commercial success in it. Cattle-breeding on modern lines is being carried on at only two places in the province. There is a cattle farm at Rangpur, which specialises in this work, while in the Dacca Central Farm, there is a dairy department, the primary object of which is to evolve a suitable herd for East Bengal. Experiments conducted at Rangpur suggest that the crossing of the pure country cows with suitable bulls produces excellent results. As the Report of the farm for 1924-25 says, "The cross half-Hissar Bengal cows bred from the poor country cows were found decidedly superior animals yielding 10 to 13 seers of milk in their maximum flow during the lactation period. The bullocks also are hardy and useful for carts."[2] The number of cows in the reproductive period in 1926-27 was 52 at the Rangpur Farm, and 35 at the Dacca Farm. The average number of bulls issued from Government farms in Bengal in the period 1923-24 to 1926-27 was, however, even less than 10 a year. In this respect, some of the other Indian provinces seem to be far more advanced. During the three years ending 1925-26 the average number of bulls annually issued from Government farms was 30 in Bombay, 52 in C. P., 75 in U. P., and 320 in the Punjab.[3] It will be clear that if any appreciable progress in the breeding of cattle in this province is to be attained within any reasonable limit

Cattle-breeding on modern lines in the province.

[1] Report of the Royal Commission on Agriculture in India, p. 213.

[2] Report of the Department of Agriculture, Bengal, 1924-25, Appendix XXXI.

[3] Report of the Royal Commission on Agriculture in India, p. 213.

of time, the increase in the supply of breeding bulls should be made much more rapidly than is being done at the present time. As regards the distribution of these bulls, the problem is less difficult. Already there seems to be a strong demand for them from public bodies and also sometimes from private individuals. When the value of good bulls is realised by the ordinary cultivators, there is bound to be a strong demand for them in the rural areas, and then, the work of their distribution will be organised by private agency. Those who maintain studs at the present time will have to keep pedigree bulls to meet the local demand for their services.

Larger use of manures.

Progress of agriculture also requires a better manuring of the land. We have seen that the use of artificial fertilisers is almost unknown in the province. The only important form of manure that is applied by the cultivators is cow-dung. But this also is applied in an insufficient amount, for a considerable part of the farm-yard manure is burnt as fuel. With the growing scarcity of firewood in the rural areas, this practice is becoming more prevalent.

The evil practice of burning cow-dung should be stopped.

In the interest of good cultivation, it is extremely desirable that this wasteful practice of burning cow-dung should be put a stop to, and the entire supply of it should be conserved for being utilised as manure. But the practice is a long-continued one, and it will be a difficult thing to bring about a sudden change in it. Success, however, will depend, in the first place, on bringing home to the cultivators the fact that it is against their real interest to do so, and secondly, on finding a cheap and convenient substitute. It is sometimes suggested that rapidly growing trees should be planted in the province so

as to ensure a cheap supply of fuel.[1] This is, however, not likely to take place to any considerable extent, owing to the pressure of the population on the soil and the scarcity of cultivable land in the province. The production of firewood, to a small extent, can be increased in the sparsely populated areas, where the configuration of the land or the nature of the soil is not favourable to the cultivation of more profitable crops. But the increase in supply that can be effected in this way will have no perceptible effect in removing the present scarcity. Moreover, the value of firewood is small in proportion to its bulk. It cannot thus bear a long transport, and its market is necessarily limited to the neighbourhood of the place where it is produced.

This depends on finding a substitute.

The only suitable thing which can at present fill up the gap created by the reduction in the supply of wood fuel and prevent the burning of cow-dung is coke. It has an almost unlimited supply, and as its bulk in proportion to value is much less than that of wood, it can be carried to distant markets without the transport charges becoming prohibitive. Coke is also much cheaper than firewood when we take into account the calorific value of the two. Over the greater part of rural Bengal, its price is nearly the same as that of the latter, weight for weight. But in respect of calorific value, a maund of coke will be equal to about two and a half maunds of firewood.

An increase in the supply of farm-yard manure, though very desirable for maintaining the soil-fertility, is not likely to take place as a result of its own demand. At its present price, it is merely a by-product from the cattle which are kept for supply-

1 See Wealth and Welfare of the Bengal Delta by Panandikar, p. 281.

ing milk or draught power. Unless the demand for either of these things requires it, the number of live-stock cannot increase, and the supply of manure obtained from this source cannot become larger. It is even possible that, if an improvement is effected in the quality of the cattle, as regards both milking capacity and draught power, the number that will be required for these purposes will be smaller. But though the supply of cow-dung is not likely to be increased, its quality can be easily improved by a more careful method of preservation. The ordinary cultivator does not know the proper methods of conserving his farm-yard manure. It has been found that the nitrogen content and the fertilising property of farm-yard manure are lost to a considerable extent, when preserved by the cultivator. Experiments carried on in the Central Provinces have shown that farm-yard manure properly stored by Government agricultural farms contains ·68% of nitrogen, while that preserved by the cultivator contains on the average ·46%.[1] It has also been found by experiments made at the Burdwan Farm on potatoes that, with equal quantities of farm-yard manure, the yield was about 15% greater in the case of that stored under improved methods in the farm[2]. If the cultivator be taught the proper methods of collecting and storing up the dung of his cattle, this loss in its fertilising property can be prevented.

Method of preserving farm-yard manure should be improved.

Again, the cultivator does not know that the urine of his cattle also possesses manurial value, and, therefore, he does not take any step to utilise it for

Manurial value of urine.

[1] See Agricultural Journal of India, Vol. XIV, article by Dr. Clouston, pp. 101—106.

[2] *Ibid.*, Vol. XXI, article by Lander and Mukundlal, p. 117.

that purpose. Ordinarily, he keeps the dung, and allows the urine largely to drain away from the place where the former is stored. It is estimated that about 2·5 maunds of potassium nitrate may be obtained in a year from the urine of a single animal under proper methods of conservation.[1] If only half this amount can be preserved from each of the enormous number of cattle in the province, it will mean a considerable increase in the supply of farm-yard manure.

Night-soil a potential source of manure

In China and Japan, where the pressure of the population on the soil is as great as it is in Bengal, the farmer utilises to the fullest extent night-soil which possesses a high manurial value. In the former country there is no kind of organic waste which is not returned to the land in the form of manure. There is a strong prejudice in this province against the use of night-soil, and practically, the whole of this important source of combined nitrogen is being wasted at the present time. If this prejudice can be overcome, an enormous quantity of natural manure can be obtained for maintaining the fertility of the soil.

Application of other kinds of manure.

These natural manures are not sufficient to meet all the requirement of the province. If intensive cultivation of a high degree is to be resorted to, a larger use of oilcake and also the introduction of artificial fertilisers are necessary. But these manures, unlike cow-dung, involve expense, and their employment cannot take place on a commercial basis, unless the produce is so much increased as to bring a net profit to the cultivator after meeting the expense. The particular kind of manure that is calculated to produce the best results depends on the

1 Article by Joshi, Agricultural Journal of India, Vol. XX, p. 36.

character of the soil and also on the nature of the crop that is to be grown. The average cultivator in this province is so illiterate, and his means are so limited that it is futile to expect him to carry on experiments with different kinds of fertilisers. It is even difficult to make him promptly adopt and utilise the results of experiments conducted at Government agricultural farms. If agricultural improvement by the employment of manures is to be effected in this province, it is essential that manurial experiments should be conducted by Government farms and that their results should be demonstrated to the cultivators. The number of Government farms that have been doing this work seems to be insufficient for the task they have to perform, and it is desirable that, for the sake of agricultural progress in the province, this number should be further increased.

Results of some manurial experiments conducted at Government farms.

The result of some of the manurial experiments conducted at Government farms seems to be very promising. Jute was grown in the central Mirpur plots under the Dacca Farm with different kinds of manure. The soil is characteristic of the extensive Madhupur Jungle area and the Barind. The results obtained in successive years show that in the semi-laterite red-soil tract, the use of bone and lime, in addition to potash, is the best for the cultivation of jute. It is estimated that for an average annual expenditure of Rs. 18 per acre on manure, there is an additional annual income of about Rs. 72 per acre[1]. If this result obtained at the Dacca Farm be known and taken advantage of, the condition of the cultivators in the red-soil tract may be materially improved. Experiments on sugar-cane carried on at

[1] Report of the Department of Agriculture, Bengal, 1924-25, p. 5.

Dacca and other places indicate that ordinary castor cake is an excellent manure for this crop.[1]

Introduction of high-yielding varieties of crops.

Introduction of high-yielding varieties of crops is yet another important and effective way of increasing the production of agricultural wealth in the province. In fact, this is the only one among the changes required for agricultural progress, which the cultivator is likely to adopt most readily. Improvements in cattle, manure and implements, all involve special outlay which he is unable or unwilling to make on account of his limited resources. But the growing of improved races of crops does not entail any such special expenditure, and, if the cultivator is convinced of their superiority, there is no reason why he should not do it. As a matter of fact, the cultivator all over the province has been showing his eagerness to grow the departmentally improved varieties of crops as soon as he has come to know of their existence.

Work done by the Agricultural Department.

But the cultivation of more productive races of crops implies, first of all, that they should be evolved by means of selection and hybridization. When this has been accomplished, it has to be determined by means of tests and experiments, carried on in each locality, whether the character of the soil and other physical conditions are favourable to the production of a particular variety thus evolved. All these things require research and experiment, which the cultivator is unable to carry on, and which have, therefore, to be conducted by Government farms. Excellent work has already been done in this direction by the Department of Agriculture, and several new

1 See the results of various manurial experiments in the Report of the Department of Agriculture, Bengal, 1924-25.

races of jute, rice and sugar-cane have been evolved, which yield a much larger return than even the best local varieties grown under the same conditions. The new races of departmentally improved jute are divided broadly into two classes—*c. Capsularies,* with a round seed-pod, and *c. Olitorius,* with a long seed-pod. The former again has three species, called *Kakya-Bombai,* 'R 85', and 'D 154', while the latter has only one variety, called *'Chinsura Green'.* It has been found that one or other of these improved races suits every jute-growing tract in the province. Of the improved varieties of rice, the more important are Dacca No. 1 *Indrasail,* Dacca No. 3 *Dudshar* and Dacca No. 2 *Kataktara. Indrasail* is a medium coarse transplanted *aman* paddy maturing about the middle of December. It is suitable for Eastern and Northern Bengal in areas where the soil is not too light and where the land retains the moisture for a considerable part of November[1]. It produces very good results when grown in the *baids* of the Madhupur Jungle. *Dudshar* is also a transplanted *aman* paddy, very similar in its characteristics to *Indrasail,* with this difference that it ripens about a week earlier. Hence it is more suitable for areas where the soil is light and situation higher[2]. *Kataktara* is a medium fine *aus* paddy which flourishes most on fertile highland with a good deal of moisture and in rotation with some *rabi* crop.[3]

The research work on sugar-cane has resulted in the selection of the *Yellow Tanna* which is far superior to the local canes in respect of the yield of

[1] See Appendix I, Report of the Department of Agriculture, Bengal, 1924-25.

[2] *Ibid.*

[3] *Ibid.*

gur. The *Tanna* is a hard cane not suitable for chewing. From this hardness, there arises the important advantage that it cannot be damaged by jackals. Recently, a new variety, C. O. 213, has been selected, which promises to give even better results than the *Tanna*.[1]

Superiority of the improved varieties.

The following table gives the results of varietal experiments on *Indrasail* and local paddies conducted at Government agricultural farms[2] :—

		Yield per acre. Mds.	Srs.
CHINSURA—			
	Indrasail	32	37
Local	*Nagra* I	29	22
Local	Cultivator's *Nagra*	28	34
RAJSHAHI—			
	Indrasail	18	27
Local	*Elai*	15	8
Local	*Gazia*	15	11
BURDWAN—			
	Indrasail	37	10
Local	*Nagra*	25	13
Local	*Jatakalma*	30	0
Local	*Dudhalma*	34	13
BOGRA—			
	Indrasail	20	0
	Indrasail (Local)	16	21

At Dacca a special test of *Indrasail* against *Malati*, the standard paddy of the district, was conducted and the result obtained was an increased yield of 25% in favour of the former[3].

The average results, per acre, of improved varieties, as against the more prolific local varieties,

1 Report of the Department of Agriculture, Bengal 1926-27, p. 23.

2 Appendix II, Report of the Department of Agriculture, Bengal, 1924-25.

3 Appendix II, Report of the Department of Agriculture, Bengal, 1924-25.

grown side by side on the lands of cultivators in the districts of Rajshahi, Rangpur and Dinajpur, are given below[1]:—

	Departmental jute		Local jute		*Indrasail*		Local *aman*		*Kataktara*		Local *aus*		Yield of gur			
													Tanna cane		Local cane	
	Md.	Sr.	Md.	Sr.	Md.	Sr.	Md.	Sr.	Md.	Sr.	Md.	Sr.	Md.	Sr.	Md.	Sr.
Rajshahi	22	6	17	34	20	36	19	25	16	32	15	16	61	11	37	38
Rangpur	23	0	18	16	18	0	15	1	16	5	13	15	57	20	36	0
Dinajpur	21	12	17	34	27	26	22	0	21	7	17	5	...	...	...	...

The returns obtained in the district of Pabna from the *Chinsura Green* jute, and the *Yellow Tanna* sugar-cane, as compared with local varieties, are given by the following figures[2]:—

	Yield per acre. Mds.	Srs.
Chinsura Green jute	29	10
Local jute	18	0
Yellow Tanna cane	91	35
Local sugar-cane	58	35

It is abundantly clear from the above results of varietal experiments that the departmental races of crops are decidedly superior to the local varieties in respect of yield. On the whole, it is estimated that, in areas suitable to their growth, the out-turn can be increased by about three maunds per acre both in the case of jute and paddy by growing the improved varieties[3]. This means an increase of Rs. 21 per acre in the income from jute lands, taking Rs. 7 to be the price of jute per maund,

[1] Annual Report of the Deputy Director of Agriculture, Northern Circle, Bengal, 1924-25.

[2] *Ibid.*

[3] Annual Report of the Department of Agriculture, Bengal, 1924-25, Appendix I.

and of Rs. 12 per acre in that from rice lands, taking the price of paddy to be Rs. 4 per maund. The increase in the income that can be realised from sugar-cane lands is even greater. If the improved varieties, such as the Yellow Tanna or C. O. 213, be grown, the yield of *gur* per acre will be at least 15 maunds greater than that from local canes. This can easily bring an additional income of Rs. 30 per acre, after deducting the cost of manufacturing *gur* from the canes.

Popularity of these improved races.

The value of these improved races of crops is being appreciated by the cultivators, and in those areas where they have been introduced, their cultivation has been extending. As yet, however, only a small proportion of the land is cultivated with the departmental seeds. Of the total area under jute, it is estimated that only about 10% was occupied by the improved varieties in the year 1924-25[1]. There is reason to believe that the spread in the case of the improved seeds of rice and sugar-cane is even less. For a more rapid progress in this respect, an increase in the amount of propaganda and demonstration work is essential. At the same time, the production of improved seeds by private farms, in addition to the supply coming forth from Government farms, is necessary. It is satisfactory to note that this work has been undertaken by a number of private farms run mostly by educated middle-class men in the province. The seeds produced by these farms are tested by the Agricultural Department, and are distributed under proper safeguards so as to avoid adulteration before they actually reach the final cultivators.

[1] Annual Report of the Department of Agriculture, Bengal, 1924-25, Appendix I.

CHAPTER IV

LAND SYSTEM

The land system of Bengal, as it exists at the present time, is mainly the result of land legislation under the British administration, and of gradual evolution under the forces of custom and economic, political and social circumstances. The celebrated Permanent Settlement of Lord Cornwallis declared the zamindars hereditary proprietors of land on a perpetually fixed land revenue with absolute rights of transfer by means of sale, behest or otherwise. But while the revenue to be paid by the zamindars to the Government was thus fixed in perpetuity and their proprietary rights over their estates were established, the Regulation of 1793 did not define in any specific way the relation that was to subsist between the zamindars and the tenants. No limit was put to the right of the zamindar to exact a high rent from the cultivating raiyats, and no provision was made to protect the rights and privileges of this latter class as against the former.

The present land system is the result of legislation, and of economic, social and political circumstances.

The Permanent Settlement did not safeguard the interest of the raiyat.

In the long period intervening between the declaration of the Permanent Settlement and the passing of the Rent Act of 1859, the Government, far from doing anything to protect the interest of the raiyats, directly strengthened the hands of the zamindars in their work of exploitation, by passing convenient regulations. The evils of the system were all the more increased by the frequent transfer of estates from the old zamindars to a new monied class, owing to their failure to pay the Government revenue in time, and also by the rapid progress of

sub-infeudation after the conclusion of the Permanent Settlement. The old zamindars were often bound to their tenants by ties of love and sympathy. But the new proprietors who stepped into their shoes, and the series of profiteering middlemen who came into existence in the period, had, as a rule, no room in their minds for these feelings and sentiments towards the tenants. They were mainly actuated by motives of pecuniary gains, and so tried their best to realise from their estates or tenures the maximum net profit.

Rent Act of 1859 was the first serious attempt to do this.

It was only in 1859, sixty-six years after the conclusion of the Permanent Settlement, that the first serious attempt was made by the Government to safeguard the interest of the raiyat. The Rent Act of that year divided the tenants into three broad classes:—(1) those holding land at a fixed rent since the Permanent Settlement, (2) those holding land for 12 years whether at a fixed rent or not, (3) those holding land for less than 12 years. It conferred on the first class—a comparatively small number—the right to hold their land at a fixed rent if they could prove that their rent had not been increased for the preceding 20 years. The most important provision of the Act was, however, that which bestowed the right of occupancy on the second class. By it, a raiyat, who held either himself or through his legal predecessors the same land for 12 years continuously, could not be evicted from the land he so held, so long as he paid the rent on account of the same. In case of dispute, the rent which he had previously paid was to be regarded as fair and equitable, unless the contrary was proved by the landlord. Even when the occupancy raiyat was liable to be evicted for non-payment of rent, it could only be done through the Court. It also laid down some definite

Defects in the Rent Act.

rules as regards the enhancement of rent, and declared illegal the practice of compelling attendance of the raiyat by the landlord. Although the Rent Act of 1859 was passed with the best intention and spirit, in actual practice, it failed to solve, in many respects, the problem of the relation between the landlord and his tenants. The right of occupancy which it professed to confer on the tenant could only be established by his proving the fact that he had held the land continuously for 12 years——a thing which was often impossible for him to do. On the other hand, when the landlord was really entitled, under the provisions of the Act, to an enhancement of rent, he found it extremely difficult to prove the legitimacy of his case before a Court of law. The natural consequence was that in a large number of cases the real object of these provisions of the Act was not realised. As the Act required the holding of the same land for 12 years for the creation of occupancy right, the zamindars also adopted the clever device of evicting the tenants just before the completion of the 12th year, and then reinstating them after some time. In some cases the raiyats were also persuaded to exchange their plots so that occupancy right might not be created.

Bengal Tenancy Act of 1885.

These and other minor defects of the Act of 1859, combined with the serious and wide-spread agrarian riots which took place in the seventies of the last century, led to the passing of the Bengal Tenancy Act of 1885. A distinction was drawn by the Act between a tenure and a holding. It divided the tenants into tenure-holders, raiyats and under-raiyats. The distinction between a tenure-holder and a raiyat is primarily based on the purpose for which the land or the right over land is held. Briefly, a tenure-holder is a person who has acquired from a

proprietor or another tenure-holder a right to hol land for the purpose of collecting rent, while a raiya is a person who has acquired such a right for th purpose of cultivation[1]. An under-raiyat is a perso who holds land mediately or immediately under raiyat[2]. As a remedy against the device adopted b the landlords for preventing the creation of occupancy right, it was provided that a tenant who ha held for 12 years any land in a village, whether the same plot or not, should be entitled to occupanc right over all the plots of land held by him for the time being in that village[3]. To facilitate the establishment of the occupancy status on the part of the raiyats, it was laid down that, as regards the continuous holding of land for 12 years, there should be a presumption in favour of the tenant, unless the contrary is proved by the landlord. The Act gives the tenant power to recover his outlay on land improvement, in case he is for any reason evicted by the landlord. It allows enhancement of the money rent of the occupancy raiyat, when a suit is instituted by the landlord for this purpose, on the following grounds[4] :—

It removed many of these defects.

Grounds on which rent can be increased.

(*a*) 'that the rate of rent paid by the raiyat is below the prevailing rate paid by occupancy raiyats for land of a similar description with similar advantages in the same village, and there is no sufficient reason for his holding it at so low a rate ;

(*b*) 'that there has been a rise in the average local

1 For actual definition which is more detailed see B. T. Act, Sec. 5.

2 See B. T. Act, Sec. 4.

3 See B. T. Act, Secs. 20 and 21.

4 See B. T. Act, Sec. 30.

prices of staple food-crops during the currency of the present rent ;

(*c*) 'that the productive powers of the land held by the raiyat have been increased by an improvement effected by or at the expense of the landlord during the currency of the present rent ;

(*d*) 'that the productive powers of the land held by the raiyat have been increased by fluvial action.'

The underlying principle of these provisions.

The underlying principle of these provisions for the enhancement of rent seems to be that the increase in the producer's surplus from land should go to that party by whose action it has been brought about. This is evidently intended for promoting the investment of capital for the improvement of land. Where the increase in producer's surplus is due to the action of nature, as in the case of fluvial action, the provision is that this should not be exclusively enjoyed by either the landlord or the tenant, but should be shared by both[1]. The Act lays down that when an enhancement of rent is claimed on the ground of higher prices of food crops, the Court should compare the average prices in the 10 years preceding the institution of suit with those prevailing in some other decade which appears equitable and practicable. Then, after deducting one-third of the excess of the prices in the later period over those in the earlier, the rent should be increased in proportion to this rise[2]. The deduction is intended to cover the

[1] The explanation of section 30 of the Act runs as follows :—"Clause (d) is a case of increase of productive powers brought about without the action of either landlord or tenant and here the net increase is to be divided between the two parties." See also clause (b), Sec. 34.

[2] See Section 32, B. T. Act.

The provision in the case of rise of prices seems to be inconsistent with the principle.

rise in the cost of production[1]. It will be seen that in the case of rise of prices, the increase in rent that is allowed by the Act merely represents the increased money value of the same amount of produce rent. The landlord does not even obtain the full compensation that is necessary for the rise in prices, on account of the one-third deduction, and in terms of produce, he receives actually less than what he did before the rise in prices. In fact, there does not seem to be any justification for making an allowance for increased cost of production. For though in a period of rising prices, supposing they are the result of inflation, the money cost of production also becomes higher, this does not in any way reduce the producer's surplus in terms of the commodity produced. Its money equivalent therefore increases in proportion to the rise of prices[2]. To give an illustration, suppose 12 doses of productive resources are applied to a plot of land producing 20 mds. of rice. Suppose also that each dose of these resources involves, under the existing level of prices, Rs. 5, and that a maund of rice sells for Rs. 4. The total expense is here Rs. 60 which is recouped from 15 maunds of rice, and therefore, the producer's surplus is equal to 5 maunds of rice or Rs. 20. If now there is a rise of 50% in the price of the product as well as in the cost of production, due to inflation, the total cost of production becomes Rs. 90 which is covered by the price of the same 15 maunds of rice. The producer's surplus in terms of the commodity produced is 5 maunds of rice which is the

1 See Field's note on Section 32, B. T. Act, in his Landholding and the Relation of Landlord and Tenant in Various Countries, p. 894.

2 This takes place when there is a uniform increase in the price of the product and in the cost of production.

same as before. Its money equivalent therefore rises in proportion to the rise in price.

A rise in the prices of agricultural products, due to the inflation of currency, is not, however, a very common and normal phenomenon. The most persistent and general cause of a rise in their prices in an agricultural country is the increase in demand brought about by the natural growth of population, or by an expansion of the export trade. While the supply of land remains the same, the demand for food-stuffs and other kinds of agricultural produce becomes larger. In such a case, a rise in the prices of these products is accompanied by a lowering of the margin of cultivation, and, although the marginal cost of production becomes higher, there is an increased producer's surplus accruing from the intra-marginal production. This increase in producer's surplus is not simply in the form of money, but also in that of the produce itself, and is called the unearned increment from land. The money equivalent of the producer's surplus thus increases in two ways: there is a rise of prices, and hence the same amount of surplus represents a larger sum of money ; there is also an increase in the volume of this surplus. It will be seen that, under the provisions of the Act, the landlord is entitled to obtain only a share in the first part of the increased money value of the producer's surplus. As it has been explained before, this merely compensates him to a certain extent for the rise in price, and, in terms of the produce, he receives actually less than before. As regards the real increase in producer's surplus, it is clear that it is exclusively enjoyed by the tenant. Like the increase in the producer's surplus brought about by fluvial action, this also is due neither to the action of the landlord, nor to that of the tenant. If the landlord is entitled

Unearned income goes entirely to the raiyat.

to a share in it in the former case, there is no reason why he should be deprived of it altogether in the latter.

Other provisions of the Act.

The Act protects the occupancy raiyat against frequent enhancement of rent by laying down that, once the rent is increased, a period of 15 years must elapse before it can be increased again. There are also provisions for the reduction of rent when the productive powers of the land have permanently deteriorated for no fault of the tenant, or when there has been a fall in the average prices of food crops. As regards the eviction of occupancy raiyats and those holding land at fixed rates, it is laid down that they cannot be directly ejected for the non-payment of rent, the landlord's remedy being to bring the holding to sale in execution of a decree for arrears of rent.[1] To the non-occupancy raiyat, the amount of protection afforded by the Act, in respect of eviction and enhancement of rent, is comparatively insignificant, while the only provision in the interest of the under-raiyat was that his rent could not exceed that paid by the raiyat himself by more than 50% when there was a registered lease or agreement, and 25% in other cases.[2]

The Bengal Tenancy Act of 1885 still forms the main basis of the relation of landlords and tenants in this province. Experience, however, brought to light certain defects in this legislative measure, and, accordingly, some important changes in its provisions have recently been brought about by the Bengal Tenancy Amendment Act of 1928.

1 See Sec. 25 and Sec. 65, B. T. Act.

2 Sec. 48 of the Bengal Tenancy Act of 1885. This section has been completely changed by the amending Act of 1928.

Bengal Tenancy Amendment Act of 1928.

The question of the transferability of occupancy holdings was so long an unsettled one. There was no provision for the transfer of such holdings in the Act of 1885, which left the matter to be regulated by custom.[1] The application of this law of usage and custom which varied in different areas was the subject of many conflicting decisions of the High Court. Occupancy holdings have, however, been very frequently transferred in most parts of the province, and landlords have in such cases generally recognised these transfers by receiving a *salami* or transfer fee. The Act of 1928 removes this state of unsettledness and confers on the occupancy raiyat the definite right of transferring his holding. The landlord is entitled to receive a transfer fee which will amount—

Transferability of occupancy right.

(*a*) 'in the case of the sale of a holding or a portion or share of a holding, in respect of which produce rent is payable in whole or in part, to twenty per cent. of the consideration money as set forth in the instrument of transfer ;

(*b*) 'in the case of the sale of a holding or a portion or share of a holding, in respect of which money rent is payable, to twenty per cent. of the consideration money as set forth in the instrument of transfer, or to five times the annual rent of the holding or of the portion or share transferred, whichever is greater ;

(*c*) 'in the case of a transfer by exchange of a holding or of a portion or share of a holding, to five per cent. of the value

[1] Sec. 183 of the Act of 1885, illustration (a). This illustration has been repealed by the Act of 1928.

thereof, as set forth in the instrument of transfer, or one and a quarter times the annual rent of the holding or of the portion or share transferred to each party to the transfer, whichever is greater, payable by each party.'[1]

It will be observed that the landlord's transfer fee is much smaller in the case of exchange than in that of sale. This is evidently intended to facilitate the exchange of plots for the purpose of the consolidation of scattered agricultural holdings. In view of the strong attachment of cultivators for their ancestral holdings and the importance of consolidation for the sake of agricultural improvement in the province, one cannot but feel that transfer of holdings by exchange should not have been subjected to the payment of any landlord's fee whatever. Small as the fee is, it is bound to increase the natural unwillingness of cultivators to part with their ancestral plots.

Right of the landlord to purchase.

The Act also provides—except in certain specified cases—that, when a holding is transferred, the immediate landlord of the holding, if he applies to the Court within a certain period, can have the holding transferred to himself and thus nullify the former transfer. In such a case, the landlord has to pay to the original transferee the amount of the consideration money, or the value of the property, as the case may be, together with compensation at the rate of ten per cent. of such amount.[2]

1 Sec. 26D of the Bengal Tenancy Act as amended in 1928. This section also contains provisions relating to the landlord's transfer fee in the case of gift and behest. But, as these things are not of much interest to the student of Economics, they are not given here.

2 Sec. 26F of the Act as amended in 1928.

Right over trees.

Under the Act of 1885 the rights of the occupancy raiyat regarding trees were not clear and they were practically left to custom which varied in different parts of the province.[1] The Amendment Act of 1928 confers on the occupancy raiyat the right to enjoy the fruits, flowers, and other products of trees, and to fell them and utilise their timber.[2] He has also received by this Act the right to erect dwelling houses of masonry, bricks and similar other materials.

Right to erect dwelling houses.

Protection to under-raiyats.

We have seen that the Bengal Tenancy Act of 1885 afforded little protection to the class of under-raiyats. As a result of the gradual process of land being transferred from *bona fide* cultivators to money-lenders and other non-agricultural classes, a considerable number of the former in almost all the districts of the province has been reduced to the position of under-raiyats. It was, therefore, thought desirable to safeguard the interest of the under-raiyats, who are the actual tillers of the soil, as against their immediate landlords, the raiyats. The Amendment Act of 1928 thus confers a number of substantial rights on this class of tenants.

Under the former law there was no doubt a limit to the amount of rent which the raiyat could realise from the under-raiyat. But this provision was merely a dead letter because, if the under-raiyat did not agree to pay the rent demanded by the raiyat, the latter could easily eject him. The Amendment Act of 1928 leaves the initial rent of an under-raiyat to agreement between the two parties ; but it puts restrictions on subsequent enhancement which can be made in two ways. It is provided that the money

Enhancement of rent.

[1] Sec. 23 of the Act.

[2] Sec. 23A of the Act as amended in 1928.

rent of an under-raiyat can be increased by a written registered contract. When this is done, the enhanced rent cannot exceed the rent previously payable by the under-raiyat by more than 4 annas in the rupee.[1] The rent of an under-raiyat can also be increased by a resort to the Court of law. As a protection against frequent enhancement, it is further laid down that, once the rent of an under-raiyat is increased, it cannot be increased again within a period of 15 years.

Eviction. The Act also protects the under-raiyats against arbitrary eviction. It provides that an under-raiyat is not liable to be ejected, except on the following grounds:—[2]

(*a*) that he has failed to pay an arrear of rent;
(*b*) that he has rendered the land unfit for the purposes of the tenancy;
(*c*) that the term of his written lease has expired;
(*d*) that the tenancy has been terminated by his landlord by one year's notice when there is no written lease;
(*e*) that he does not agree to pay the rent determined by the Court.

The power of the landlord to evict the under-raiyat on the ground of the expiration of the lease, or of the termination of the tenancy by a notice, is further restricted by a proviso to the sub-section relating to this. It is laid down there that an under-raiyat shall not be liable to ejectment on these grounds, if he has been admitted in a document by the landlord to have a permanent and heritable right

[1] There are two exceptions. See Sec. 48B of the amended Act.

[2] Sec. 48C of the amended Act.

to the land, or if he has been in possession of the holding for a continuous period of 12 years, or has a homestead thereon. Even in the case of under-raiyats not coming under any of these categories, the landlord cannot evict them on the two grounds mentioned above, unless he has satisfied the Court that he requires the land for his homestead or for cultivation by himself.[1] The Act of 1928 makes the holding of an under-raiyat heritable but not transferable, except with the consent of the landlord.[2]

Having studied the main features of the legislation relating to landholding, let us now consider the system of land tenure, as it exists at the present time in Bengal. At the apex of the system, stands the class of proprietary zamindars paying land revenue to the State. This revenue, as it has been stated before, was fixed in perpetuity by the Regulation of 1793. Their proprietary right, which was established by that Regulation, has been since subjected to various limitations introduced by later legislation in the interest of the cultivators. Between the zamindars at the top, and the cultivating raiyats at the bottom, there are successive grades of middlemen standing one upon another, who are called by the Bengal Tenancy Act of 1885 'tenure-holders'. They collect rent from the grade immediately below them, and after paying out of it the stipulated rent to the grade immediately above, retain to themselves the surplus as their own profit. This series of intermediate interests in the land system of the province was largely the outcome of the Permanent Settlement, for, although the process of sub-infeudation had been

The present system.

Zamindars at the top.

Middlemen or tenure-holders.

[1] Sec. 48C of the amended Act.
[2] Sec. 48F of the amended Act.

in existence even before it, the extent to which it had been carried was comparatively very small. It was the Permanent Settlement which gave a strong impetus to this process, and it was only after the conclusion of that settlement that sub-infeudation developed its present ramification.

They were largely created by the Permanent Settlement.

When the land revenue payable by the zamindar to the state was permanently fixed, it was possible for him to grant in his turn permanent lease of his estate to other people on a similarly fixed but higher rent. This would bring to the zamindar not only a net annual income, after meeting the State demand for revenue, but also a large sum as the price of the interest created and transferred by him, at the time of the execution of the new lease. The tenure-holder, who thus received the estate, would, in his turn, transfer it to another man on a cash premium, and also on an annual rent which would leave him a surplus after meeting his own obligation to the zamindar. In this way, as the process of sub-infeudation was continued, the chain of middlemen became longer, and, as each successive grade of intermediate tenure-holder increased the rental in order to secure a net annual income for itself, the burden, which ultimately fell on the raiyat, became heavier.

The spread of the middleman system was also facilitated by legislation.

The rapid spread of the middleman system in this province after the Permanent Settlement was also facilitated by the formal sanction of the Legislature. The Regulation of 1793 contained a prohibition against granting leases for a term exceeding 10 years. But the provision of the Regulation in this respect seems to have been a dead letter, in as much as we find that, in spite of this prohibition, the practice of granting perpetual leases of *taluks* and other tenures on a fixed rent had become fairly common with the

Bengal zamindars.[1] In 1812 the prohibition was repealed by the Legislature, and a few years later, in 1819, it went so far as to formally declare valid even those tenures which had been created before 1812 in direct violation of the law.

Patni **tenure and its derivatives.**

A typical kind of tenure to which the Legislature gave its sanction at this time is the *patni taluk*. It may be described as a permanent, heritable, and transferable tenure at a rent fixed in perpetuity. One of the conditions in the lease is that, if the stipulated rent falls into arrear, the tenure may be brought to sale by the zamindar, and if the proceeds of the sale are not sufficient to cover the arrears, other properties of the *patnidar* are liable for it. On the other hand, if there is a surplus, it will go to the defaulting *patnidar*. When a *patni taluk* is thus brought to sale, all the leases granted and the encumbrances created by the former tenure-holder become void, and the new purchaser receives the *taluk* in the condition in which it was at the time of its creation. A *patnidar* generally sub-lets his *taluk* to another person, and when this is done, the new tenure, thus brought into existence, is called a *darpatni taluk*. The *darpatnidar* again divests himself of the management of the property and leases it on a higher rent to a *sepatnidar*. In this way sub-infeudation has proceeded in many cases to several degrees lower. The incidents of these subordinate tenures are generally similar to those of the original *patni taluk*. They are permanent, heritable and transferable, and are held on a fixed rent.

The *patni* system had its origin in the zamindari of the Maharaja of Burdwan. It is believed that at the time of the Permanent Settlement, the land

[1] See Field, Landholding, p. 617.

revenue assessed by the Government was 90% of the rental of the estates, and it was, therefore, often a difficult thing for the zamindars to collect the rent and pay the Government revenue punctually.[1] It is also to be noted that, as regards the realisation of the revenue, the law was executed with the utmost severity, and consequently, a large number of the estates was brought to sale and transferred from the hands of the original zamindars, on account of their failure in paying the revenue in time. The assessment of the estate of the Maharaja of Burdwan was higher than that of most other estates, and as the zamindary of the Maharaja was an extensive one, it was almost a necessity to sub-let parts of it on the *patni* system, in order to ensure the timely and regular payment of the Government revenue. From the estates of the Maharaja of Burdwan, the system spread to those of others, and in the greater part of Western Bengal it became very popular with the zamindars as a convenient means of divesting themselves of the actual management of the estates and, at the same time, of ensuring a decent annuity.

Sub-infeudation has made its greatest progress in the district of Backerganj.

Sub-infeudation has been carried to its greatest length in the district of Backerganj, where the number of successive grades of tenures often exceeds a dozen. The creation of so many intermediate interests is chiefly due to the nature of the country. A considerable part of the district, specially in the south, consisted of wastes covered with forest and interspersed with numerous rivers and streams. It was the interest of the landlord to bring these areas under cultivation. But this was no easy task under the conditions prevailing at the time. It took several years to clear the forest and bring the land to a condition fit for cultivation. During this time

This is largely due to the nature of the country.

[1] See Guha, Land System in Bengal and Behar, p. 107.

he cultivator and the labourer, who had often to be imported from other places, had to be maintained in a country where the necessaries of life were difficult to obtain, and where communication was undeveloped. Moreover, the division of the country into a large number of isolated tracts by rivers and streams rendered the work of supervision over any extensive area almost an impossible task.

Howla tenure and its derivatives.

In these circumstances, it is not surprising that, for bringing these wastes under cultivation, the landlord would take resort to the system of granting leases of considerable tracts on favourable terms. Reclamation is the origin of many of the tenures that are found in the district, but of these, the *howla* and its derivatives are in a special sense connected with it. The *howladar*, when he obtained the grant of an area of wastes, would sometimes reclaim a part of it himself and sub-let the rest to other people for the same purpose. If he could sub-let the entire block of waste land under him on profitable terms, he would often do it instead of taking the trouble of reclaiming any portion of his estate himself. The middleman who takes a lease from the *howladar* would, in his turn, repeat the same process, and in this way, sub-infeudation for the work of reclamation would extend from the *howladar* to the *osat howladar*, from the *osat howladar* to the *nim howladar*, from the *nim howladar* to the *osat nim howladar*, and so on. Ordinarily, as an estate was granted on lease to a subordinate grade of middlemen, it would be divided into parts, and each part would be given to a separate lessee. Thus, with the progress of sub-infeudation, the number of subordinate tenures created in this way would increase almost in geometrical progression. These tenures are generally

permanent, heritable and transferable, but their rent is not fixed in perpetuity, unless it is especially mentioned in the lease.

The *howla* is also found in other districts where forests had to be reclaimed. Thus, in Chittagong, Noakhali and Khulna, the *howla* tenure is in existence, but its importance in these districts is very much less than that in Backerganj.

Jimba is another kind of tenure peculiar to Backerganj.

A peculiar kind of tenure found in Backerganj is the *jimba*. The term literally means protection. The origin of this tenure was in the protection afforded by one landlord to the oppressed tenants of a weaker one, when the latter failed to do so. Instances of such oppression of tenants by pirates and robbers were not uncommon in the latter part of the Mahomedan rule, and also in the early period of the British administration. The oppressed tenants, when they found their landlord was unable to protect them, would naturally revolt against him and seek the protection of some powerful landlord in the neighbourhood. The rival landlord, if he was willing and able to afford the needed protection, would sometimes accommodate the tenants in his estate. But more often he would incorporate the land of these tenants in his own estate, with the pretension of holding a subordinate tenure under the deserted landlord.[1] Originally, this kind of tenure was called a *jimba*, but in later times, the term began to be loosely used to denote any kind of dependent *taluk*.

Mandali tenure of Midnapore.

The *abadkari* or *mandali* tenure of Midnapore has an origin similar to that of the *howlas* of Backerganj. As the name signifies, the tenure came into

[1] See Settlement Report of Backerganj, p. 50.

Cf. Panandikar, Wealth and Welfare of the Bengal Delta, p. 215.

existence in connection with the reclamation of wastes. The manner in which it was evolved is described in the following way in the Report of the Rent Commission :—

The way in which it came into existence.

'The zamindar granted a tract of waste land to a substantial raiyat, termed as *abadkar,* who undertook to bring it under cultivation, paying the zamindar a stipulated lump sum as rent. This *abadkar,* partly by the labour of his own family and dependents, and partly by inducing other raiyats to settle under him, gradually reclaimed the greater part of the grant and established a village upon it, to which he usually gave his name, and as the head of the settlement he was called *mandal* or headman. The zamindar and the *mandal* from time to time readjusted the terms of their bargain, but the zamindar never interfered between the *mandal* and his under-tenants. In settlement proceedings of 1839 these *mandals* were declared to have only the rights of *sthani* or *khudkasht* raiyats and not to be entitled to any *munafa* or profit ; but though not exactly recognised as *talukdars,* they gradually acquired rights superior to those of ordinary *khudkasht* raiyats ; and as they were left to make their own terms with the raiyats settled by them, they must have a very considerable profit besides what they obtained from any land cultivated by themselves. The *mandali* right became transferable by custom.'

The original position of the *mandal* was, in fact, somewhat different from what is conveyed by this description, and it cannot be properly understood without reference to the particular social organisation of the people amongst whom the *mandali* system prevailed. This kind of tenure is generally found in those areas of the Midnapore district, where the bulk of the population consists of aboriginal tribes, such

as the Santals, Bhumijs and Mahatos.[1] The social organisation of these tribes was, until recently, and is, to a certain extent even now, the patriarchal village community.[2] In such a community, the *mandal* or the headman was the representative in all external relations, and all transactions with the outside world had to be carried on through him. When a tract of waste land was granted for reclamation to the mandal, it was not given to him in his individual capacity, but as the representative of the community to which he belonged. The *mandal* allotted the land among the members of his community from whom he also realised the rent payable to the landlord. Originally; he collected only the amount that was actually to be paid, but later on he realised a larger sum and thus made a profit for himself. In course of time, the *mandal* came to occupy the position of a tenure-holder with a permanent, heritable and transferable right, and the other members, who were once co-raiyats with him, became, for all practical purposes, his under-tenants. In recent times, the Bengali *mahajan* or the money-lender has in many cases ousted the aboriginal *mandal* by purchasing his *mandali* right. This is specially noticeable in Silda, Bagri, Bhanjabhum and other *parganas* under the Midnapore Zamindari Company.[3] The process of the development of the *mandal*, from the position of a co-raiyat with others, to that of a tenure-holder, has not been completed in all the areas where the system prevails. Thus in Ramgarh, the *mandal* still occupies the position of a raiyat, although he derives a profit from the fellow raiyats.[4] On the whole, the *mandal*

1 Settlement Report of Midnapore, p. 41.

2 Ibid.

3 Ibid., p. 42.

4 Ibid.

may be said to occupy the position of a tenure-holder and has been recognised as such by the Government at the time of settlement.[1] His right is heritable and transferable but the rent he pays is, as a rule, liable to enhancement.

The *mandali* system is much simpler than the *howla*.

Unlike the *howla* system of Backerganj the *mandali* system of Midnapore, though it has the same origin, has not developed a complexity of subordinate interests. In fact, it may be said that sub-infeudation in this district, as in others of West Bengal, has not been carried to the extent to which it has been done in most parts of East Bengal. Where the *mandali* system prevails, the raiyats generally pay their rent to the *mandal,* and the latter to the zamindar. In those areas where the *patni* system prevails, as in the estate of the Maharaja of Burdwan, the *patnidar* has often granted a lease to the *darpatnidar,* and the latter to the *sepatnidar.* But this is not very common, and in the majority of the estates in the district, the number of successive grades of intermediate tenure-holders does not exceed two.[2]

***Ghatwali* tenure.**

In the western districts of Birbhum, Burdwan and Bankura, there is a kind of tenure, called the *ghatwali,* which is essentially a service tenure, although one of the incidents is the payment of a small amount of rent. These grants of land were made for rendering police or military service, originally for guarding the *ghats* or mountain passes on the western frontiers of these districts. As the office of the *ghatwal* was hereditary, these grants also passed from the father to the son, as a matter of course, and in this way the tenures became heritable and permanent. The *ghatwals* are considered

[1] See Guha, Land System in Bengal and Bihar, p. 409.

[2] Settlement Report of Midnapore, p. 37.

removable, and their lands can be resumed on their failure to render the service. Their right of transfer does not generally exist, although in the case of the Birbhum *ghatwals* the power has been conferred by statute for some definite purposes. In recent times, a large number of these tenures has been resumed by the Government on an amicable basis, the *ghatwals* being exempted from rendering service and recognised as raiyats with occupancy rights.[1]

We have studied above the more important forms of tenure that are now in existence. The middleman system has spread all over the province in some form or other, and the total number of all the different varieties is so large that it is impossible to give even a brief account of them within the scope of this treatise. Every particular system contains some special features which are to be traced to the circumstances under which it was evolved. Speaking generally, these intermediate interests in land are permanent, heritable and transferable. As regards their rent, fixity is not a necessary condition. In some tenures, as in the *patni* and its derivatives, the rent is permanently fixed, while in others, it is liable to enhancement. These incidents of the tenures are generally determined by the conditions stated in the lease, but they have also been modified to a certain extent by custom, case law and direct legislation.

The raiyats at the bottom.

Below this class of tenure-holders, lie the raiyats or tenants. But even here sub-infeudation has made its appearance. The raiyat is not always the actual cultivator of the land. There are sometimes other people who hold land under him and cultivate it on payment of a rent. These are the under-raiyats. In such cases, there is hardly any real difference between

1 Administration Report of Bengal, 1921-22, p. 101.

the position of a tenure-holder and that of a raiyat, although the law makes a distinction between the two and confers different rights and privileges on them. The under-raiyat, who cultivates the land, is really a raiyat, and the raiyat, who receives the rent, is nothing better than a middleman or tenure-holder. Sub-infeudation has often been carried several degrees below the grade of the raiyats. In the district of Backerganj, it was found, during the survey and settlement operations, that there were 76120 under-raiyats of the 1st degree, 2545 of the 2nd degree, and 94 of the 3rd and lower degrees.[1] Mr. Momen, in his Settlement Report of Jessore, writes that sub-infeudation in that district below the status of raiyats is very common and generally goes down to the 2nd or 3rd degree.[2] This extension of sub-infeudation often makes it difficult to determine which link in the chain should occupy the status of the raiyat. In the settlement of some of the private estates in the district of Rangpur, this particular difficulty arose, and after a good deal of discussion in which the Director of Land Records and the Commissioner of the Division took part, it was settled that no definite rule should be laid down and that each case should be decided on its own merits.[3]

Here also sub-infeudation has made its appearance.

Differences in the nature and incidents of tenancies in the province have been considerably reduced by the passing of the Rent Act of 1859 and the Bengal Tenancy Act of 1885. We have seen that the holders of land below the class of middlemen who are called tenure-holders, have been divided into the

Differences in the incidents of tenancies have been reduced by legislation.

1 Settlement Report of Backerganj, p. 71.

2 Settlement Report of Jessore, p. 115.

3 Settlement Report of 4 private estates in the district of Rangpur, p. 7.

following broad classes:—(*a*) raiyats on fixed rent, (*b*) occupancy raiyats, (*c*) non-occupancy raiyats, and (*d*) under-raiyats. Of these four classes, by far the largest is that of the occupancy raiyats, and in fact, the most important effect of the passing of the two Acts mentioned above has been the conferment of the occupancy right on the great majority of the cultivators of the province. As the ordinary holder of land acquired the status of the occupancy raiyat, the incidents of his tenure, whatever they might have been before, were definitely prescribed and determined by law, and the former differences were thus removed by the operation of the tenancy laws.

Still there are varieties.

Yet some forms of the tenancies and under-tenancies in various parts of the province exhibit a good deal of variety as regards their nature and incidents, and we propose now to consider the more important of these. In Nadia, Murshidabad and other neighbouring districts, there is what is called the *utbandi* system. The characteristic features of this system of landholding are that the raiyat has no fixity of the area of land he holds, and that his land is measured and assessed by the landlord every year. The tenant is at liberty to renounce at the end of the year any portion or the whole of the land held by him, while the landlord also has the right of evicting the *utbandi* tenant from any part or the whole of the holding at the end of the year. The rent is assessed every year by the landlord on the basis of the land actually cultivated by the tenant in that year, or on the appraisement of the crops. When the tenant wants to renounce any portion of his holding, it is, under the true *utbandi* system, not necessary to give any previous notice, the land he does not cultivate being considered to have been surrendered. Formerly, the landlord also did not

Utbandi system.

grudge it, for the land that was held under this system of tenancy was, as a rule, of a very poor character, and as the population was sparse in these areas, there was no strong demand for this kind of land. Moreover, in the absence of rotation and any systematic application of manure, the land also required periodical fallowing so that it might maintain its productive powers. It will be seen that this sort of instability in the condition of holding is inconsistent with efficient cultivation and the investment of capital for effecting improvements on land. With the growth of population and the consequent increase in the pressure on the soil, the demand for *utbandi* lands also has become stronger. As a consequence, some changes have already taken place in the incidents of the system. A previous notice of the surrender of any part of the holding is now often demanded by the landlord, and the assessment is in many cases made, not on the basis of the area under cultivation at the time, but on that held by the tenant, whether he cultivates it fully or partially.

Section 180 of the Bengal Tenancy Act provides that a tenant cannot acquire the right of occupancy in a plot of *utbandi* land, unless he has held that particular plot continuously for a period of 12 years. It will be seen that this provision places the *utbandi* tenant on the same footing as that of the ordinary tenant under the Rent Act of 1859. The reason why the tenant in *utbandi* land was precluded from acquiring occupancy status in the way provided for by the Tenancy Act was probably that the system was supposed to be, on the whole, not prejudicial to his interest. In view of the generally poor character of the land held under the system, the cultivator enjoyed under it the privilege of being

exempted from the payment of rent for that part of his holding which was kept fallow. But whatever justification the system might have in the past has practically disappeared under the altered circumstances in the province. The inefficient and careless cultivation which it promotes can hardly be afforded at the present time when the pressure of the population is so high as it is.

Sanja tenancy of West Bengal.

The *sanja* tenancy of West Bengal is similar to the *dhankarari* of the eastern districts of the province. Under both, the rent is paid in kind. A certain fixed quantity of the produce, usually paddy, is paid to the landlord irrespective of the actual out-turn. This system of produce rent exists both in the case of the *raiyati* tenancy and in that of the *under-raiyati* tenancy. The rent, when compared with cash rent, is usually very high. In Bankura, where the *sanja* system widely prevails, it represents ordinarily one-third of the gross produce of the land.[1] The main explanation of this high rent is that the *sanja* tenant is very often the person whose holding has been purchased by his landlord-*mahajan* for his failure to repay debt. When the possession of the holding has thus been secured, it is given back to the former occupant on the basis of a produce rent. The tenant being dispossessed of his holding, has no other alternative than to receive it back on the terms offered by the landlord. Another important cause of the exorbitant character of produce rent, as compared with cash rent, is that, as with the progress of time the price of agricultural produce rises, the burden of rent, when paid in a given amount of money, tends

[1] Settlement Report of the District of Bankura by Robertson, p. 71.

to diminish, whilst that of produce rent remains the same as before.

The *barga* system.

Much more important than any of these is the *barga* system which prevails to a considerable extent almost all over the province. In the district of Dacca alone, there are about 200 square miles of land held under this system.[1] In West Bengal districts, the same system exists, though under a different name. The *bhagchasi* of these districts is practically the same as the *bargadar* in East Bengal and other parts of the province. The term *bhag* means division, and under the *bhag* system, as under the *barga,* the produce is divided between the landlord and the tenant. Normally, it is divided equally between the two parties, but sometimes the share of the landlord comes down to one-third of the gross produce. The proportion in which it is actually divided is chiefly determined by local custom, but it also depends to a certain extent on the quality of the land, the kind of produce, the contribution made by the landlord towards the expenses, and finally, the relation between the demand for and the supply of such land. Ordinarily, the landlord supplies the seed and bears the expense of manure, and where he does this, his share in the produce is half. In those cases where he does not bear any of these expenses, he has naturally to be content with a smaller share. This is, however, modified by the other considerations stated above. If the land is very fertile, or if the demand for such land is very large in relation to the supply, the *bargadar* may agree to surrender a part of the customary share, while under reverse conditions, he may obtain somewhat more than that.

In comparison with the money rent of similar

[1] See Settlement Report of Dacca by Ascoli, p. 51.

The rent in this system as compared with the rent of occupancy holdings.

lands, the rent of the *barga* lands seems to be unusually high. The average cash rent of an acre of *raiyati* land in Bengal will not exceed Rs. 3-8-0. An acre of land normally produces about fifteen maunds of paddy, which, at the present price, will bring about Rs. 60 to the cultivator. On these estimates, the cash rent represents only about one-seventeenth of the value of the gross produce. In the case of those lands on which jute and other more profitable crops are grown, the value of the gross produce per acre will be considerably greater, and so the rent will form a smaller proportion of that value than is stated above.

In the above estimate we have not taken into account the *abwabs* which the ordinary raiyat has to pay in addition to his rent and from which the *bargadar* is free. These *abwabs* are various petty exactions, not sanctioned by law, which are realised by the landlord from his tenants. They may be broadly divided into two classes—the routine and the ceremonial.[1] The former consists of regular levies in proportion to the amount of rent for the purpose of covering the cost of collection, including the perquisites of the landlord's agents. These agents are never paid by the landlord more than a mere nominal remuneration, and are expected to supplement it by *tahuri* and other kinds of realisations from the tenants. The latter kind of *abwabs*—the ceremonial—is demanded at the time of particular ceremonies, occurring at the house of the tenant as well as of the landlord, and constitutes a small source of additional income to the latter. The rate of these illegal exactions varies from estate to estate, but on the average, it will not exceed one-fourth of the

[1] See Settlement Report of Dacca by Ascoli, p. 42.

amount of rent. Taking the rent of an acre of *raiyati* land to be Rs. 3-8-0, and the *abwabs* of all sorts to be one-fourth of this, the total burden on the raiyat imposed by the landlord becomes Rs. 4-6-0 per acre. If the value of the gross produce of an acre of land be Rs. 60, the amount that has got to be paid to the landlord by the raiyat, both as rent and as *abwabs*, represents less than one-fourteenth of that value. In view of this, it is at once clear that, even when we take into consideration the *abwabs*, the rent of the *barga* lands is extremely high compared with the cash rent of the *raiyati* lands.

The position of the *bargadar*.

The *bargadar* or *bhagchashi*, as he is called in West Bengal, is generally regarded as a mere labourer in this province.[1] The owner of the land, that is, the raiyat, is supposed to have the right to resume it from the *bargadar* at the end of any crop and transfer it to another ; and when this is done, the former *bargadar* who is ousted does not feel that his right is in any way violated by this, and acquiesces in this transfer without any opposition and resentment. Often, however, when the *bargadar* is an honest and efficient tenant, he is allowed to cultivate the same land for a number of years. The fear that continued cultivation of the land by the same person may lead to the creation of some sort of right is the root of the transfer that generally takes place. In such cases, a good *bargadar* is reinstated on the same land after a short interval.

[1] The position of the *bargadar*, which was uncertain under the Act of 1885, has been clearly defined by the amending Act of 1928. According to this latter Act, a *bargadar* is not a tenant unless—(a) he has been expressly admitted to be a tenant by his landlord in a document, or (b) he has been or is held by a civil Court to be a tenant. See Sec. 3, clause 17 of the Bengal Tenancy Act as amended in 1928.

It should be mentioned here that the *bargadars* do not form a class by themselves but are often tenants with their own lands. When the size of the holding is too small to provide sufficient employment to a raiyat and the workers in his family, he naturally seeks some land on the *barga* system by cultivating which he can have additional income. In Bengal, almost every landlord or tenure-holder keeps some land in his *khas* possession. This is generally cultivated on the *barga* system. In recent times, there has been a growing tendency on the part of money-lenders to purchase the holdings of raiyats when the latter fail to repay their debts. These lands, after they are thus purchased, are, as a rule, given to the former tenants on the *barga* system. We have seen that in Bankura and other western districts of the province, the same process is going on under the *sanja* system. The reason why the *sanja* system is more prevalent than the *barga* in the western districts is that in these areas, the fate of the crops largely depends on rainfall, and, as a consequence, failure of harvest is not of very infrequent occurrence. The owner of the land thus finds that if it is settled on the *barga* system, he will receive nothing in a year of harvest failure; whereas, if it is granted on the *sanja* system, his claim remains intact and he suffers no loss on this account.

Spread of the *barga* system.

Its evils.

The extension of the *barga* system in this way has a very serious consequence in so far as it reduces the occupancy raiyats, whose holdings are thus purchased by the *mahajans*, to the condition of landless labourers. It also has the effect of reducing the national dividend, so far as the production of agricultural wealth is concerned. Mr. Ascoli in a letter to the Director of Land Records describes this evil in the following words:—"I have walked over villages when

the first spring showers have fallen and I pointed out to the villagers at sight their barga lands. In 9 cases out of 10 my description has proved correct. The value of the crop depends almost entirely on ploughing at the right time. When the first rain has softened the land, the cultivator at once turns to his cash-paying lands ; his barga lands are left until his other lands have been completely tilled. When the crop begins to appear the difference is no less noticeable, especially in the case of jute. The jute that is grown on barga lands is left to fight its own battle with the weeds, and the result is a crop of jute inferior in quality and quantity, which can only constitute the dregs of the market."[1] There is a good deal of exaggeration in the picture drawn above. It is rarely a fact, at least at the present time, that jute crop on *barga* lands is 'left to fight its own battle with the weeds'. No crop worth the name can be obtained from jute fields without weeding and thinning, and the cultivator, who has spent labour and capital on ploughing and sowing, is not foolish enough to spoil the harvest for the labour of weeding and thinning. It is quite possible that when the first spring showers fall, his attention is drawn first to his cash-paying lands, because here the profits are larger. It does not necessarily follow that, for this reason, his *barga* lands are cultivated entirely at the wrong time. Showers generally come after short intervals, and the cultivator can adjust to a considerable extent the preparation of his different fields to the successive showers. As a matter of fact, we have seen that ploughing and sowing in the case of jute, as in that of other crops,

[1] See Settlement Report of Dacca by Ascoli, pp. 50-51, or App. XI, 2nd letter, para. 9.

generally extend over a fairly long period. We have also to remember in this connection that *bargadars* are not always tenants with their cash-paying lands, and when this is the case, no such preferential treatment of the lands is possible.

Effect on the national dividend.

Nevertheless, it cannot be denied that the cultivation of *barga* lands is not so efficient as that of the cash-paying lands. The incentive to the application of labour and capital by the cultivator to *barga* lands is certainly weakened by the thought that half the product of such application will go to the landlord. The employment of labour and capital in the cultivation of land is carried to what may be called the margin of profitableness, that is, the point at which the additional return to such labour and capital by gradual diminution becomes equal to the cost involved in it. This margin of profitableness is reached much earlier when the additional produce that is obtained has to be divided between the landlord and the tenant, as under the *barga* system, than when it goes entirely to the latter. As there is no security of tenure, the *bargadar* is also not likely to make any investment of capital for the permanent improvement of the land. We thus see that the cultivation of land under the *barga* system tends to check the employment of capital and labour, and, therefore, to diminish the production of agricultural wealth.

Comparative importance of different classes of raiyats.

It has been said above that the tenancy legislation in the province has conferred the right of occupancy on the great majority of the raiyats. The following table gives the distribution of the area held by raiyats amongst the three classes—occupancy

raiyats, non-occupancy raiyats and under-raiyats, in some of the districts of the province :—[1]

District.	Area held by All raiyats.	Occupancy raiyats.	Non-occupancy raiyats.	Under-raiyats.
	Thousand acres.	Thousand acres.	Thousand acres.	Thousand acres.
Backerganj	1,389	1,346	42	81
Faridpur	1,297	921	55	133
Dacca ...	1,441	1,349	37	19
Tippera ...	1,178	1,103	35	68
Mymensingh	3,015	2,864	115	124
Jessore ...	1,577	1,370	6	493

It will be clear that, of the total area held by raiyats in these districts, the proportion that is occupied by the non-occupancy raiyats is very small. The majority of the tenants enjoy the status of the occupancy raiyat and are protected by law against eviction or unfair enhancement of rent. A part of the area held by the occupancy raiyats is sub-let to under-raiyats, and it will be clear from the figures given above that the area held by this class is generally greater than that held by the non-occupancy raiyats. Statistics for other districts are not available in convenient forms, but the above figures will suffice to indicate the great predominance of the class of occupancy raiyats in the province.

[1] These figures are taken from the Settlement Reports of these districts where they are given in these forms. In other cases they have been estimated from detailed statistics given in the Appendices to these Reports. Some of the Reports do not supply these detailed statistics also. In Rajshahi the occupancy raiyats hold 92% of the area under all raiyats.

How far the unearned income from land has gone to the zamindars and tenure-holders and how far to the raiyats.

Since the time of the Permanent Settlement, there has been an enormous increase in the economic rent of land in Bengal, due to the rapid and continuous growth of population and the development of the external trade. It is interesting to study to what extent this unearned income from land has gone to the landlords and the middlemen, and to what extent it has been retained by the cultivators. The following table gives the average rent per acre paid by the occupancy raiyats in some of the districts of the province:—[1]

District.	Rent per acre.		
	Rs.	A.	P.
Dacca	2	13	0
Mymensingh	2	12	0
Tippera	3	2	2
Backerganj	4	8	10
Faridpur	2	9	2
Noakhali	4	4	5
Rajshahi	3	3	0
Jessore	2	7	5
Midnapore	3	15	5
Bankura	1	12	7

The average for the ten districts is Rs. 3-2-4. For the whole province, the corresponding figure cannot be determined until the Survey and Settlement Reports for all the districts are published. But there is reason to believe that it will be somewhat less than the amount mentioned above, for almost all the districts where sub-infeudation has made the greatest progress have been included in the above table. Even if we take the average rent of *raiyati* lands as Rs. 3-8-0 per acre, and one-fourth of this as *abwabs*, the amount paid by the raiyat in all these forms comes up to Rs. 4-6-0 per acre. Of this, 10

[1] See Settlement Reports of various districts.

annas goes to the State in the shape of land revenue, so that the balance, Rs. 3-12-0, represents the share of the zamindars and the tenure-holders for each acre of land.

There is no simple and direct method of estimating the amount of the producer's surplus retained by the cultivator. The economic rent of different classes of land is different. An acre of jute land will bring a larger surplus than an acre of rice land. The bulk of the cultivated land in the province is, as we have seen, under paddy, and let us estimate the producer's surplus on the supposition that the crop that is grown is paddy. Under the *barga* system the cultivator generally pays to the landlord about one-half of the gross produce. A part of this share of the landlord constitutes of course the return to his investment in the form of seeds and manure; but even making allowance for this, one-third of the produce may be regarded as his net receipt as landlord. Since the *bargadar* willingly cultivates such lands on these terms, it may be reasonably supposed that his share of the produce not only covers his direct outlay on cultivation but also remunerates him for his own labour and trouble. Thus one-third of the gross produce may be regarded as the economic rent of such rice lands, and if 12 maunds be taken as the out-turn, in consideration of the fact that the yield of *barga* lands is somewhat less than that of cash-paying lands of the raiyats, it becomes equal to Rs. 16 per acre at the current price of paddy.[1] The rent paid by the raiyat together with the *abwabs* does not seem to represent more than 30% of the economic rent.[2]

The greater part of this income is enjoyed by the raiyats at the present time.

[1] The price of paddy being taken to be Rs. 4 per maund.

[2] The conclusion drawn here cannot claim strictly logical accuracy. The average economic rent of land in a

That the raiyat enjoys a good deal of the economic rent of the land he cultivates is also proved by the fact that the *raiyati* holdings command a fairly high price in the province. The average price of a *bigha* of *rayati* land (occupancy holding) will not be less than Rs. 50 in most of the districts of the province.[1] In the more fertile and densely populated flood area, the price will be considerably higher than this. Moreover, the cultivator who purchases such a holding has generally to pay a *salami* of about 25% of the price to the landlord for the recognition of the transfer.[2] This price together with the *salami* represents the capitalised value of the difference between the economic and the actual rent of the land. The raiyat cannot be expected to make such an investment unless he believes that his money will bring him a sufficient return. It will be clear from these facts that, although the Permanent Settlement has brought into existence a series of successive grades of intermediate tenure-holders in the land system of the province and has enabled the landlords and this class to absorb an increasing amount of the unearned income from land, the bulk of this income at the present time is enjoyed by the cultivators.

How this has been brought about.

The present favourable position of the raiyat as the recipient of the greater part of the unearned income from land has been mainly brought about by the rise in prices and the tenancy legislation. With the rise in the price of agricultural produce, this income

country cannot be determined on account of differences in fertility and situation of different lands. Yet the arguments given above will make it abundantly clear that the greater part of the economic rent of land in Bengal is at the present time enjoyed by the raiyats.

1 A *bigha* is about one-third of an acre.

2 This *salami* has been legalised and its rate fixed by the Bengal Tenancy Amendment Act of 1928.

has rapidly swelled. But the landlord has not been able to enhance his rent with the same rapidity, on account of the various restrictions put upon him by the tenancy laws.

Relation of the land-tenure system to efficient cultivation.

With the exception of some forms of land-holding which are comparatively of small importance, the land system in the province is not inconsistent with efficient cultivation. The great majority of the cultivators enjoy the occupancy status. They are protected by law from arbitrary eviction and unfair enhancement of rent by the landlord. They even enjoy the greater part of the producer's surplus from land. These rights and privileges of the tenant ensure to him practically all the fruits of the investment of capital and labour in the cultivation of his holding. If, in spite of this stimulus, methods of cultivation are backward and unproductive, the defect cannot be said to lie in the system of land tenure. A charge is often brought against the zamindars and the tenure-holders that they do not invest any capital for the improvement of land. Those who bring this charge should realise that, according to the present tenancy law in the province, there is not much stimulus to such investment of capital on the part of the landlords. If a landlord invests capital in this direction, and if the raiyats do not agree to pay higher rent in consideration of it, the only recourse of the landlord is to go to a law Court and prove there that the productive powers of the land have increased as a result of such investment. This is no easy task, and so it is often impossible for him to obtain the Court's decree for the enhancement of rent. Human nature being what it is, when there is this uncertainty in the return, it is too much to expect the landlords to invest capital for the improvement of land.

CHAPTER V

Agricultural holdings

The business unit in agriculture has not manifested that irresistible tendency towards steady and continuous expansion which is a characteristic feature of most non-agricultural industries. The scale of production in agriculture, as compared with that in most of the non-agricultural industries, is small. The chief explanation of this lies in the fact that the economies of large scale production are not so important in agriculture as they are in other industries. Agricultural operations are mostly seasonal in character and cannot be carried on either simultaneously or continuously as the work in a factory. Here every operation has its proper time; and one process begins when another has been finished. Even then there is often a long interval between two successive processes so that nature may perform its own work. Thus, when the ploughing season comes, land is prepared, and while this is done, no other work can be carried on on the same land. Similarly, when the preparation of the land is completed, the seed is sown and there is no work until the plants have grown up to a certain stage.

The business unit in agriculture is smaller than that in other industries.

Lesser advantages from division of labour

This seasonal and intermittent nature of the work, combined with the fact that at any particular time only one operation can be performed, limits very much the possibility of the application of the principle of division of labour in agriculture. For, if workers were highly specialised, they would remain unemployed for the greater part of the year and there would accrue no real economy from such

specialisation. These reasons also explain to a considerable extent the comparatively small scope for the application of expensive and highly specialised machinery in agricultural work. Concentration of capital and labour on a given area of land in agriculture cannot be carried to anything like the extent to which it can be done in manufacturing industries. This fact constitutes another obstacle to the replacement of the small business by the large. Owing to the strong action of the law of diminishing return, any considerable increase in the scale of production of a farm would be brought about, not so much by a more intensive cultivation of the same land, as by acquiring more land for this purpose. Except within certain limits, this sort of expansion of the business unit in agriculture would not be consistent with economies of production. An undue extension of the area of land under the same farm would render the work of supervision a highly difficult one, and would either increase much the expenses on this account, or provide opportunities for the shirking and evasion of work by the labourers. In an old country, predominantly agricultural, such an increase in the average size of the farm would not also be a practicable thing, on account of the fact that the area under cultivation cannot be increased and that every farmer, in the absence of other suitable occupations, is extremely unwilling to part with his land.

and large scale production in agriculture.

While these observations apply to agriculture in general, the actual size of the farm, which is most efficient and, therefore, most economical from the the point of view of production, varies widely from one branch of agriculture to another. In the production of corn, the large farm has some decided advantages over the small. It

Size of the economical farm in different branches of agriculture.

has been found that the number of animals per acre, required for ploughing, diminishes up to a certain stage as the size of the compact holding increases.[1] Another advantage which the large farm possesses over the small is in the application of labour-saving machinery. Although it has been said that agriculture is not, as a rule, amenable to machine production, in the cultivation of corn, a number of operations can be performed by machinery. The profitable application of these agricultural machines, which are often expensive, depends on the possibility of providing sufficient employment to them. A small farmer is unable to employ them, mainly because his holding is too small to utilise to a sufficient degree their services. There is also the consideration that, as the resources of a small farmer are limited, he is often unable to purchase them for his use. What has been said of machinery does also apply, though to a lesser extent, to expensive agricultural implements. The farmer with a small holding is often unable to buy them, and even when he is able to do so, he cannot utilise them to the extent to which it is done by his stronger competitor.

The small farmer, on the other hand, has generally advantages over the large in such branches of agriculture as fruit and vegetable growing, stock-breeding, dairying, etc. Here a most important factor of efficient production is individual attention to be devoted to the plants or animals, as the case may be. They require a loving care and watchfulness on the part of the farmer, and where these are wanting, they do not thrive well. In these branches of agriculture, the operations are not so standardised

[1] See Hermann Levy, Large and Small Holdings, p. 157.

and uniform that they can be performed by machinery. It is even unsafe to rely on hired labourers who do not feel the same keen interest in their work as the farmer himself and the members of his family are apt to do.)

It will be noticed that, so far as Bengal is concerned, those branches of agriculture, where small farming is more advantageous than that on a large scale, have little practical importance at the present time. We have seen in an earlier chapter that the great bulk of the cultivated area in the province is under one staple crop—rice. Of the total net cultivated area of about 24 million acres, nearly 21 million acres are accounted for by this crop alone. The other important crops grown are jute, pulses, sugar-cane, etc. In the cultivation of these, the advantages of small farming, which arise mainly from the indispensable individual care and attention applied to the plants, are not of any special importance, and, as a consequence, small farming is not more economical than large farming. On the other hand, the latter possesses advantages over the former in respect of the employment of specialised machinery and implements. Of the total area under cultivation, only about seven hundred thousand acres, or less than 3% are under fruits and vegetables. As regards stock-breeding, dairying, poultry-keeping, where small farming is the rule, it should be noted that in this province, these branches of agriculture are not carried on independently, but mainly as subsidiary occupations by people whose principal means of livelihood is the cultivation of land.

The more important crops produced in Bengal are favourable to large farming.

Size of holdings in Bengal.

The character of the more important crops being favourable to large farming, let us see to what extent the actual conditions in the province conform

to this. The following table gives the size of the average *raiyati* holding in some of the districts in Bengal[1] :—

District.	Size of the average *raiyati* holding. Acres.	
Bankura ...	... ... 1·86	
Midnapore	... ... 1·29	
Jessore ...	... ... 1·78	
Backerganj	... ... 2·51	
Faridpur ...	... ... 1·39	
Dacca ...	... ... 1·52	
Mymensingh	... ... 2·67	
Rajshahi ...	... ... 2·20	(occupancy holding at cash rent.)
Noakhali ...	... ... 2·30	
Tippera ...	... ... 1·90	

We see from the above figures that in 6 out of the 10 districts the holding is less, while in the remaining 4 it is greater, than 2 acres. The average for the 10 districts is 1·94 acres. This does not necessarily indicate the area cultivated and even held by an average raiyat, for it happens very frequently that the same person has more than one tenancy. Supposing that on the average, the raiyat possesses two tenancies, the area held becomes 3·88 acres. According to the Census Report of Bengal, 1921, there are in the province 30·5 million cultivators including the dependents. Taking 5 persons as constituting an average family, the total number of families of cultivators becomes 6·1 millions. As the

1 These figures are taken from the Settlement Reports, where they are given. In those cases where they have not been calculated and given in this form, I have made my own calculation from statistics given in the Appendices to these Reports. Statistics of the other districts are not yet available.

total cultivated area is about 24 million acres, there are about 4 acres of cultivated land per family.

Holdings in foreign countries.

It is interesting to compare with this area, the size of the average agricultural holding in foreign countries as given below[1]:—

Country.	Average size of the holding.
England	62·0 acres.
Germany	21·5 "
France	20·25 "
Denmark	40·0 "
Belgium	14·5 "
Holland	26·0 "
U. S. A.	148·0 "
Japan	3·0 "
China	3·25 "

The extreme smallness of the agricultural holdings in Bengal, as compared with those in western countries, is at once clear from the above figures. In all the western countries mentioned above, the average holding is many times as large as that in this province. In some cases, as in the United States of America and England, it is so large that hardly any comparison can be made with Bengal. Amongst western countries, Belgium is regarded as essentially one of small holdings. But even here we see that the average holding is several times as large as that in this province. The only foreign countries, mentioned in the table, in which the holdings are as small as they are in this province, are China and Japan ; but it should be noted here that the methods of cultivation in these two countries, so far as the employment of agricultural machinery and implements are concerned, are generally much behind those of western countries. The lot of the Chinese

[1] Khan Bahadur S. A. Latif's article in the Indian Journal of Economics, July, 1927.

or Japanese farmer is not much better than that of his fellow in Bengal. In spite of the fact that the average Japanese farmer devotes the most unremitting toil to the cultivation of his holding, and that he is assisted in everything by his wife and children, he is hardly able to extract a decent living from it. He has to supplement his income from land by his earnings from sericulture and other subsidiary occupations.[1]

The ideal size of the holding from the standpoint of the national dividend.

From the standpoint of the national dividend, the ideal size of the agricultural holding is that which attains the maximum efficiency in production. It is that size under which the employment of the other factors of production can be made with the greatest advantage so that from the same amount of cost the largest return is obtained. When the holding is of this size, and when the employment of the other factors of production is made in the right way and in proper proportion, the national dividend, so far as the utilisation of land in agriculture is concerned, is the largest. It should be remembered here that the size of the holding of maximum efficiency depends, among other things, on the state of agricultural technique. Before the introduction of modern agricultural machinery, maximum efficiency was attained with a moderate or even a small holding. But with the progress of time, as improved implements and machinery began to be used, the size of the farm also had to be increased, if full advantage from them were to be realised.

This theoretically ideal size of the agricultural holding may not be justifiable under all circumstances. The concentration of the ownership of land in a relatively small number of large holders may

[1] Calvert, Wealth and Welfare of the Punjab, p. 76.

give rise to a very unfair distribution of wealth in a country; thus while it is calculated to produce the largest volume of agricultural wealth, it may not be consistent with the greatest amount of economic welfare. This argument has a special significance in a country where agriculture forms the means of livelihood of the bulk of the people, and where other openings for their employment are very limited. When for the above consideration it is not desirable to have agricultural holdings consistent with the maximum efficiency of production, the principle which should determine their size is that they should be sufficiently large to provide a decent living to the farmers who cultivate them. At the same time the question of the economy of production should not be altogether left out of sight. Holdings should be such as to secure in a considerable measure the economies of production.

It is not justifiable under all circumstances.

That a holding of 4 acres or less is entirely insufficient in size to attain in any appreciable degree the economies of modern agricultural methods—particularly in the production of crops like rice, pulse, jute and sugar-cane—will hardly be denied by anybody. The area of the average holding in Bengal is uneconomical even under the present backward methods of cultivation. One of the essential requisites of the cultivator in the province is a pair of bullocks. This is also the most expensive of all the things he has to keep for the cultivation of his land—both in respect of initial expense and in that of maintenance. From the standpoint of the economies of production, it is therefore necessary that the holding of the cultivator should be large enough to fully utilise the services of at least one pair of these animals. It is generally recognised by cultivators in the province that a

How far the agricultural holdings in Bengal are consistent with economies of production.

pair of bullocks is ordinarily sufficient for the cultivation of about 5 acres of land, when the crop produced is mainly rice. Since rice occupies nearly 87% of the total area under cultivation, it will be clear that the average holding in Bengal is not large enough to attain fully the economies of production even under the present methods of cultivation.

Holdings are not even sufficient for providing a decent living to the cultivator.

Such a holding is also insufficient to provide a decent living to the cultivator. Supposing, as is generally the case, he grows rice, let us see how far a holding of this size under present conditions is sufficient to meet the requirements of the family of the cultivator throughout the year. Taking 4 acres as the area of the average holding, the normal yield in a year will be about 60 maunds of paddy. The average family of agriculturists may be taken to consist of 5 persons—two adults and three children. An adult person of this class consumes three-fourths of a seer of rice a day. At this rate he will consume in a year 273 seers of rice. A maund of paddy yields about 27 seers of cleaned rice, so that the annual consumption of an adult will be about 10 maunds of paddy. The children will consume less. Supposing that they require half this amount, the total consumption of the family in a year will be about 35 maunds of paddy—20 maunds for the two adult members, and 15 maunds for the children. Thus out of the 60 maunds, 35 maunds will be required for the consumption of the cultivator's family, and there will remain a balance of 25 maunds to be applied to other purposes. This quantity, when sold in the market, will bring about Rs. 100. He also may have another Rs. 20 from the cultivation of a second crop in the double-cropped area in his holding so that, after providing for his own requirement as regards the consumption of rice, he has a surplus

of about Rs. 120. But we have to deduct from this the rent he has to pay and also the expenses he has to incur for the purchase of seed, implements, labour and also for the maintenance of his cattle. The rent may be taken to be Rs. 17-8-0 including the *abwabs,* being Rs. 4-6-0 per acre.[1] If we add to this the cultivation expenses, as mentioned above, the surplus that remains is hardly sufficient to procure to the cultivator the other necessaries of life and efficiency.

Causes of the small size of the holdings in Bengal.

The present small size of the agricultural holdings in Bengal has been brought about by a gradual process of subdivision. It is mainly the result of two causes—the growth of population and the law of inheritance. When a raiyat dies, his holding is subdivided amongst his heirs. According to the Hindu law of succession prevailing in the province, on the death of a person, his property is equally divided among his sons. Thus if a raiyat has a holding of 6 acres and if he leaves three sons, then after his death, it will be split up into three holdings of 2 acres each. The Mahomedan law goes even further than this and entitles even the daughters to a share of a person's property. In this way with the advent of each successive generation, the holdings have been subdivided and have gradually diminished in size, until at the present time, they have become so small as to afford not even a bare subsistence in a large number of cases.

An effect of the law of equal inheritance in the province.

One effect of this equal inheritance of the land by all the sons of a person has been that everyone of the agricultural classes possesses some cultivable land. There is no serious harm—apart from the question of the economy of production—in this gradual subdivision of land amongst the growing

[1] See Chap. IV.

population, so long as the individual holdings do not reach the point where they are too small to provide a living for their holders. But once this point is reached, serious consequences ensue. Those members of the agricultural community, whose holdings are not sufficiently large to provide a living, can neither solely depend on agriculture, nor freely seek other occupations for their livelihood. They cannot tear themselves away from the land which they possess and go to other places in search of employment. Thus we find that though large numbers of the agricultural classes in Bengal are living in a very miserable condition on account of the insufficiency of the land they possess, very few of them are willing to go to industrial centres to work in the factories. The great majority of the workers in organised industries in this province consist of immigrants from other provinces, particularly Bihar and Orissa. The raiyat who sticks to his land and cultivates it, tries to eke out his income with subsidiary earnings the opportunities for which in the rural areas are very limited. Generally, he keeps one or two cows along with his bullocks and gets something by selling the milk. But the prevailing scarcity of fodder prevents him from realising any but a very small income from this source. To work as hired labourer in or near his own village, he considers as beneath his dignity and social status, and he avoids it as long as he can. Moreover, the demand for such labour in the rural areas is insignificant, except in certain seasons when he is likely to be engaged in his own field. The natural consequence of the situation is that he is often compelled to increase his burden of debt and to lower his standard of living which is already too low for keeping up his efficiency.

Fragmentation of holdings.

There is another aspect of the question which we have not, as yet, considered. Apart from the smallness of the agricultural holding, there is the fact that it is, as a rule, fragmented. The holding does not consist of a single compact block of land, but of a number of small and scattered fragments, often of a very irregular shape. Sometimes the different strips of land held by the same raiyat are two or three miles apart from one another. In the district of Dacca, the average size of the plots is ·55 acre, varying from ·36 acre in the *thana* of Harirampur to ·91 acre in Kapasia *thana*.[1] In my own village in the same district, the majority of the fields will not exceed one *bigha, i.e.*, about one-third of an acre. Dr. R. K. Mukerjee, in his *Rural Economy of India,* says that in a certain Murshidabad village subdivision and fragmentation have been carried to such an extreme that the average holding (?) is of the area of 10 *cottas, i.e.*, ·20 acre. The smallest plot in that village is only 2 *cottas, i.e.*, ·04 acre.[2] Such cases are not exceptional but are met with in many villages in this province.

Its causes.

The chief explanation of this fragmentation lies in the manner in which a holding is normally subdivided amongst the heirs of a deceased person. If the holding be divided without disturbing the size of the individual plots, giving pecuniary compensation for any difference in value of the shares thus divided, the number of fragments does not increase, although the size of the resultant holdings becomes smaller. But in reality the division of the holding generally does not take place on this principle. Ordinarily, a holding consists of a number of plots,

1 Settlement Report of Dacca, p. 71.

2 Page 51.

each with its own advantages and disadvantages as regards situation and productivity, and every one of the heirs is given a share in each of such plots. Thus if a raiyat has three fields of approximately the same size but of different advantages, and if he has three sons, the holding may be subdivided in such a way as to give one field to each of the sons. Any difference in the value of the fields thus alloted may be adjusted by a cash payment. In such a case the size of the individual plots does not diminish as a result of the partition. But if each son takes a share in each of the plots, the holding which originally consisted of three plots would be split up into nine fragments of smaller size. In this way fragmentation is carried to an unnecessary length by the way in which a holding is usually subdivided. Fragmentation is also caused by the transfer of land from one holder to another by means of purchase and sale. When a cultivator buys a plot of land not adjoining to any of his own, it means that there is a further addition to the number of fragments which make up his holding. Again, when a raiyat dies without any direct heir, his holding is likely to be divided amongst a large number of distant relatives, thus giving rise to a large number of fragments. The break-up of the joint family system also tends to produce the same effect.[1]

It is also found in other provinces.

Fragmentation of agricultural holdings is not a peculiar characteristic of Bengal, but is found in other provinces as well. It has also been in existence in most of the old agricultural countries of the world, where the conditions were favourable to its growth. In some of the Indian provinces it has been carried to such an excess that the result has sometimes become

[1] See Report of the Royal Commission on Agriculture in India, p. 134.

almost ludicrous. For example, in Ratnagiri, it has been found that there are plots with an area of only $\frac{1}{160}$th of an acre, or 30¼ square yards ; in the Punjab, there have been found fields which are more than a mile in length, but only a few yards in width ; while in some extreme cases fragmentation has been carried to such an extent that no effective cultivation is possible at all.[1]

Evils of fragmentation.

There are various evils that arise from this sort of fragmentation of agricultural holdings. In the first place, it involves the waste of cultivable land in the form of boundaries for demarcating one field from another. Then, when the holding consists of a number of scattered plots which are sometimes 2 or 3 miles apart, a good deal of time is lost in moving cattle and implements from one plot to another. When the implements are heavy and are thus not easily portable, it is an extremely difficult task to carry them from one plot to another, particularly in areas where there are no good roads.[2] The actual cost of cultivation also increases when the holding is fragmented. To plough one large field involves less cost than to plough five small plots having the same aggregate area. The employment of modern improved implements and machinery is often rendered impossible by the smallness and irregular shape of the individual plots of land. When the fragments are scattered over a wide area, the cost of carrying cow-dung and other things to the different plots, and also that of bringing the harvest from them to the cultivator's house, become heavy. In

[1] Report of the Royal Commission on Agriculture in India, p. 134.

[2] At present the implements used in this province are almost all very light and so the difficulty does not practically exist.

such a case, the work of supervision and watching the crop also is a highly difficult one. It is for this reason that a raiyat sometimes feels it necessary to grant a part of his holding to an under-raiyat, or to make a settlement of it on the *barga* system. The scattered character of agricultural holdings is also the source of frequent quarrels and litigation amongst cultivators, for the more numerous are the fragments, the greater is the likelihood of friction between owners of adjoining plots. Lastly, fragmentation tends to check permanent improvement of land, such as the sinking of wells, arrangement for better drainage, fencing, etc. If a holding consists of five detached plots, the raiyat cannot afford to sink a well for each of those plots. But if instead of five scattered plots, he has a compact block of land, it may be quite possible for him to sink a well for his entire holding.

Fragmentation of holding and of cultivation.

A distinction is sometimes made between fragmentation of agricultural holdings and that of cultivation. The two problems are not necessarily identical. For example, if raiyats with very small holdings secure, as under the *barga* system, detached plots from others for the purpose of cultivation, fragmentation of cultivation tends to exceed that of holdings. On the other hand, if the holders of small fragmented holdings, instead of cultivating them themselves, grant them to the owners of adjoining plots for this purpose, fragmentation of cultivation becomes actually less than that of holdings. Where the two problems are fundamentally distinct, fragmentation of cultivation is of far greater significance than fragmentation of holdings. The various evils of fragmentation that we have discussed above are mainly those which arise from fragmentation of cultivation. So far as this province is concerned, the

The distinction is not fundamental in Bengal.

two problems are not, however, fundamentally different. Cultivation generally takes place on the basis of holdings: the great majority of the holders of land cultivate it themselves. Fragmentation of cultivation mainly arises from fragmentation of holdings, and a solution of the former problem has to be attained chiefly through a solution of the latter.

Remedies for the present defects.

Having studied the character of agricultural holdings in the province, let us now consider what changes are desirable for removing the existing defects. We have seen that one of the defects is that the size of the average holding is too small to attain in any large measure the economies of modern agricultural methods; that it is even hardly sufficient for maintaining in an efficient condition the cultivator and his family. The obvious remedy of this defect lies in an enlargement of the size of the holdings. But such a change, apart from the great practical difficulty of bringing it about, will be of doubtful advantage in promoting the real welfare of the people under the present conditions. If the area of land held by the average cultivator is to be appreciably increased, it will mean that a very large number of the agricultural population will have to give up agriculture and will have to earn their livelihood in other ways. A part of this surplus population can no doubt be provided in the organised industries in the province by the replacement of the immigrant workers from other provinces. But the total number that can be absorbed in this way is comparatively small, for, as yet, industries of all kinds support only about 7% of the population of the province. It is, however, frequently suggested that attempts should be made to prevent the further subdivision of holdings in the future. This is certainly desirable in the case of those holdings which, as a

How far the enlargement of holdings is possible and desirable.

The prevention of further subdivision.

result of such subdivision, are likely to become too small for providing a subsistence to their owners. A general prevention of further subdivision is likely to give rise to the serious problem of the unemployment of those who, on account of such prevention, will cease to have holdings of their own. There is also great practical difficulty in attaining this object, for the only effective way of doing this is by the limitation of succession to a single heir. This will involve interference with the laws of inheritance of both Hindus and Mahomedans, and it is almost certain that such violent changes in the laws of succession will not be sanctioned in the near future by the representatives of the people in the Legislature of the province.

Desirability of consolidation.

The other serious defect of the agricultural holdings is, as we have seen, their excessive fragmentation. The removal of this defect, unlike that of the preceding one, is of undoubted advantage. Neither from the standpoint of the volume of the national dividend, nor from that of its distribution, there is any justification for retaining the existing condition of things. The question, therefore, is whether this is a practicable thing and how it can be accomplished. Consolidation of scattered agricultural holdings has been largely effected in many of the European countries and also in Japan. In our own country, the Punjab has taken the lead among the different provinces and has already attained a considerable measure of success in this respect. The actual method by which consolidation is made is by a redistribution of the land in a given area amongst the existing holders in such a way that each of them receives a large compact block in the place of the scattered fragments he formerly possessed.

Reconstitution of agricultural holdings in foreign

Consolidation in foreign countries is based largely on the principle of compulsion.

countries is based to a large extent on the principle of compulsion. The Government does not in any country carry out readjustment on its own initiative, but, as a rule, takes up this work only when it is wanted by at least a certain number of persons in a locality. In this respect the law in most countries prescribes a limit to the minimum number of persons who are entitled to demand a readjustment. The German law relating to this matter provides that the demand for consolidation should come from at least the majority of the land-owners in a locality, reckoned on the basis of the area. In Austria, this proportion is one-third. In Japan, according to the law of 1909, the consent of half the land-owners in the district in which consolidation is to be carried out is sufficient, provided that the area or the value of the land owned by them forms not less than two-thirds of the area or value of the land to be readjusted. On the other hand, there are some countries such as Norway, Sweden and Finland, where no such minimum is fixed by the law and where a single person is entitled to demand the readjustment of agricultural holdings.[1]

When the demand for consolidation of holdings is made by the required number of persons in any area, the authority concerned decides, first of all, whether it should be effected or not. If the decision is in favour of it, the actual work of the rearrangement of holdings is carried out, and all the land-owners in that area have to accept the new arrangement whether they like it or not. It will thus be seen that in foreign countries consolidation of agricultural holdings is carried out even against the will of a

[1] See Report on the Consolidation of Small and Scattered Agricultural Holdings in Various Countries in Europe by Patil.

large proportion of the people concerned. In a number of these countries where the readjustment can be made at the instance of a single person, it means that practically all the land-owners in an area can be compelled to accept it.

Consolidation in the Punjab is entirely on a voluntary basis.

Consolidation of scattered agricultural holdings, that is being made in the Punjab, is entirely on a voluntary basis. It is being done through co-operative societies formed for the purpose. At the outset, preliminary propaganda work is carried on by the credit co-operative staff ; and when in any particular area, the people express their desire to readjust their holdings, the Consolidation Sub-inspector proceeds to the spot and starts a vigorous campaign in the locality. For a perfect readjustment, it is of the highest importance that all the holders of land in that area should agree to readjust their holdings, for if some of them stand out, their intervening plots will interfere with the formation of compact holdings and will also render the task of constructing roads a highly difficult one. When, as a result of the propaganda, all or at least a large majority of the people are converted to the principle of consolidation, a co-operative society is started for the purpose, and from amongst its members, a committee is formed to prepare a scheme for the actual exchange of lands. A person who joins such a society is bound to abide by any method of redistributing the lands, when approved by two-thirds of all the members. At first the exchange of land is made only for a period of four years, and if after the expiration of this term every one of the members is not willing to make the arrangement permanent, the society comes to an end and the old fields are restored to their former owners. It is expected that after four years even if all the members do not agree to make the readjustment

permanent, most of them will agree amongst themselves to exchange their fields.

Progress of consolidation in the Punjab.

The work of consolidation was commenced in the Punjab in 1921. From that time up to July, 1927, the total area readjusted was 98,000 acres and the number of villages dealt with was 314.[1] Since then, a further progress has been attained. Altogether 133,000 blocks have been readjusted and their number reduced to about 25,300. The average area of a block has increased from ·7 acre to 3·8 acres.[2] It will be seen that as yet the progress has been very slow. The total cultivated area in the province is about 30 million acres, of which only 98,000 acres or less than 3·3 per mille have been consolidated in the course of seven years.

Advantages and disadvantages of the Punjab method.

Consolidation of scattered agricultural holdings through co-operative societies has this redeeming feature that it is not forced upon any unwilling parties. But the inherent defect of the method is that it is a very slow and tedious process. It is an extremely difficult thing to convert all the persons in an area to the principle of consolidation. There are always to be found some cultivators who are not convinced of the benefits of readjustment, or who have got too strong an attachment for their ancestral holdings to be persuaded by reasons or request to give them up. In such cases, unusual delay and unnecessary expenditure are often involved in the attempt to win over the recalcitrant land-owners, and when, in spite of this endeavour, some of them stand out of the association formed, the success of the work of consolidation is greatly impaired by the existence of

[1] See Report of the Royal Commission on Agriculture in India, p. 139.

[2] Ibid.

intervening fragments. Moreover, this method of readjustment is not likely to meet with success in those areas where the people have not been accustomed to co-operative action on other lines. In the Punjab, it has been found that the consolidation movement has been practically confined to those areas in which credit and other forms of the co-operative movement have made the greatest progress.

An element of compulsion seems to be desirable for Bengal.

For these reasons, it seems desirable that for facilitating the work of consolidation, legislation introducing an element of compulsion should be resorted to in this province. The Bengal raiyat has usually a strong attachment for his ancestral holding. It is almost futile to expect that every one of the raiyats in an area to be consolidated should agree to surrender his holding. If the readjustment of holdings depends on the consent of all, Bengal must wait long before any appreciable amount of work in this respect is done. The necessity for legislation on the basis of compulsion has been felt in the Central Provinces, where an Act for the consolidation of holdings has recently (1928) been passed by the Legislative Council. This Act "gives power to a proportion not less than one-half of the permanent right-holders holding not less than two-thirds of the occupied area in a village to agree to the preparation of a scheme of consolidation, which scheme, when confirmed, becomes binding on all the permanent right-holders in the village and their successors in interest."[1] The Act is a permissive one and its application at the present time is limited to the Chattishgarh division only. It is desirable that legislation on the same lines should be undertaken

[1] Report of the Royal Commission on Agriculture in India, p. 140.

in this province also for bringing about the consolidation of agricultural holdings. At the outset the application of the law may be confined to those areas in the province where the conditions seem most favourable to its introduction.

Bengal Tenancy Amendment Act of 1928 and consolidation.

By the Bengal Tenancy Amendment Act of 1928, the occupancy raiyats, who form the great majority of the cultivators of this province, have obtained the right of transferring their lands. The creation of this right has removed one of the obstacles to the readjustment of agricultural holdings. The Act also provides for a smaller landlord's fee in the case of transfer by exchange. But, as it has been observed before, even this comparatively small fee is calculated to increase the natural unwillingness of the cultivators to exchange their plots.[1] It thus seems to be desirable that, for facilitating the work of consolidation of agricultural holdings in the province, statutory provision should be made so that the landlord should not be entitled to any transfer fee whatever in the case of the exchange of land for this purpose.

[1] See p. 84.

CHAPTER VI

AGRICULTURAL FINANCE AND INDEBTEDNESS

Production is generally carried on with borrowed capital. This fact calls for the existence of banks and other financing agencies.

All producers incur expenses during the process of production and are reimbursed at a later stage when the product is marketed. The production of a commodity thus implies the command of capital by the businessman ; but it generally happens that the amount of capital required by him is very much greater than what he can himself supply. It is this fact which chiefly calls for the existence of banks and other credit institutions in the modern industrial system. Although agriculture, as it is carried on in Bengal, does not involve the application of much capital, it is, none the less, true that the cultivator is frequently in need of financial assistance for meeting the expenses that have to be incurred for the cultivation of his land. This need arises when he wants to effect permanent improvement in his land, or to purchase his cattle and implements which may all be regarded as the fixed capital of his business. Borrowing also becomes necessary for carrying on the current agricultural operations, as, for example, when he has to purchase seed or manure, or when he has to employ hired agricultural labour.

The need for borrowing on the part of the cultivator in Bengal.

In addition to the above needs which are directly related to the cultivation of his land, the farmer in Bengal is often driven to the necessity of borrowing for the maintenance of his family and also for various other reasons. When there is a failure of harvest, or when there is a prolonged illness, the cultivator, who has practically no reserve fund, has to support his family by means

of borrowing. Even in the case of a normal harvest, a large proportion of the agriculturists of the province has to live by borrowing for a part of the year, when the current year's crop is not yet ready, whilst the resources from the preceding crop are all exhausted. This sort of borrowing is to a certain extent the result of improvidence on the part of the cultivator who considers himself rich when the harvest is brought home, and indulges in luxuries without realising properly his wants and necessities only a few months hence. In the jute districts of Eastern Bengal, the cultivator is often obliged to borrow in a year in which the price of jute is abnormally low. It has been said in a preceding chapter that the price of jute is subject to great fluctuations from time to time. When the price is high, the cultivators in this area are fairly prosperous ; they raise their standard of living to a certain extent. But when after a year or two it suddenly drops to a level which leaves little profit after meeting the expenses of production, they are compelled to run into debt. Then there are also other causes of borrowing, such as litigation and social ceremonies. As the cultivator is not in the habit of saving, these things are generally performed by means of loans.

The village money-lender is the principal financing agency for agriculture in the province.

Until the advent of co-operative agricultural credit societies in the beginning of this century, the village money-lender or *mahajan* was the sole source of agricultural credit in the province. Whenever there was any need for borrowing, whether for the growing of crops, or for some unproductive purpose, such as litigation or social ceremony, the only resort of the cultivator was the village money-lender. Even to-day, in spite of the existence of the co-operative organisation, he forms by far the most

important financing agency for the vast agricultural industry of the province. The *mahajan* is ready to advance a loan, so long as the borrower appears to him to be in a position to repay it and agrees to pay the interest demanded by him. Ordinarily, the loan is granted on the personal credit of the borrower, but when he has no such credit, or when the loan wanted represents a large sum of money, some kind of security has to be provided. Very often ornaments are used for this purpose ; but these ornaments, possessed by the cultivators, are not generally of sufficient value for serving as security for big loans, and in such cases, the holding of the cultivator is mortgaged either in part or in entirety, as it may be necessary. Money-lending in rural Bengal is generally a specialised occupation, and those who follow it do not combine it with other kinds of business, such as grain-dealing. It thus happens that the transactions between the village money-lender and the cultivators are generally in the form of money, and it is only in rather exceptional cases that the repayment of the loan is made in the shape of grain or other kinds of produce raised by the borrower.

Exploitation of agriculturists.

As in most other countries, the agriculturists in Bengal are greatly exploited by the money-lenders who finance them for the production of crops, as also for various other purposes. The rate of interest charged by these *mahajans* is so high as to deprive the tillers of the soil of a substantial part of the fruits of their labour. For short-term loans, it is commonly one anna per month in the rupee, which is equivalent to 75% in a year. Not infrequently, it is even higher than that. For big and long-term loans, the rate is scarcely less than 24% ; while ordinarily, it is much higher than that. On the whole, it can be

assumed that the average rate of interest on all kinds of loans to the agriculturists in the province will not be less than 36% per annum.

The prevalence of this high rate of interest in the rural areas is to a certain extent due to the risk that attends money-lending business. A proportion of the loans advanced by the village money-lenders to the agricultural classes always fails to be realised; while, as the business involves a good deal of time and trouble, in the realisation of the loans in particular, a part of the interest represents merely the wages of management. But even when we have made allowance for these things, it cannot be denied that the net interest which actually comes to the money-lender, is unusually high. This is largely made possible by the fact that in the business of money-lending, carried on in the rural areas, there is no serious competition. The demand for loans is so enormous that a person who has money to invest has not much to think as to how to attract borrowers. Moreover, there is something like a common understanding among money-lenders in the same neighbourhood regarding the minimum rate of interest at which they should advance loans, and in the absence of any serious competition, it is generally adhered to.

Explanation of the high rate of interest.

When the rate of interest is so high, the profitable application of capital in agriculture, as in other industries, cannot take place, except to a comparatively small extent. It is a well-known law in Economics that as the amount of labour and capital applied in the cultivation of land increases, the marginal productivity tends to diminish. The cultivator, in applying any particular dose of labour and capital to his land, calculates in his mind the probable increase in output arising from it and the

Effect of the high rate of interest on the application of capital and

on the national dividend.

additional expense it will involve. If he thinks that the increase in return will be larger than the increase in expense, he will apply it ; in the reverse case, he will not. As each successive dose of labour and capital is applied, this surplus of gain to him gradually diminishes, because of the operation of the law of diminishing return, and he stops at what is called the margin of profitableness. Other things being equal, the lower the rate of interest to be paid for borrowed capital, the farther is this margin of profitableness ; and, as a consequence, the larger is the amount of capital that can be profitably applied in the cultivation of land. On the other hand, the higher is the rate of interest, the nearer is this margin and the smaller is the quantity of capital that is employed. Thus, the high rate of interest, charged by the village money-lender for loans, tends to restrict the employment of capital in the cultivation of land and thereby to check the production of agricultural wealth in the province.

Its effect on the chronic indebtedness of agricultural classes.

This high rate of interest at which the borrowers have to contract their loans, is one of the causes of the chronic agricultural indebtedness in the province. The insufficient employment of capital, and the consequent smaller production of wealth, increase the need of the cultivator for borrowing ; and when he incurs a debt, it swells so rapidly, owing to the accumulation of interest, that it often becomes impossible for him to free himself from its burden. This is particularly the case when he has to borrow any large sum of money for such necessities as failure of crops, litigation, protracted illness, marriage and *sradh* ceremonies. In fact, borrowing on these occasions often leads to the ultimate ruin of the cultivators. The *mahajan* is not really anxious for the realisation of the loan, so long as he thinks that

the borrower has enough assets. When the period of the bond which is executed at the time of taking the loan is about to expire, he takes another bond for the original sum borrowed together with all the interest that is accumulated. In this way, the debt goes on increasing, and successive bonds are executed until the *mahajan* thinks that it is no longer safe to continue the policy.[1] He then institutes a suit for the realisation of the loan, and brings the holding of the borrower to sale in execution of the Court's decree. Often he himself purchases it and makes a settlement with the former occupant either on a fixed produce rent, or on the *barga* system. In this manner the financing of the agriculturists by the village money-lender often reduces them from the position of occupancy raiyats to that of mere *bargadars*.

Permanent agricultural indebtedness and extravagant expenditure on social ceremonies.

It is sometimes said that the permanent indebtedness of the cultivators is chiefly due to extravagant

[1] A typical instance of how a small sum originally borrowed rapidly develops into an overwhelming debt is given by Ascoli in his Settlement Report of Dacca. "One Umedali Bepari of Astapaika, in Rupganj thana, was the possessor of a large holding of some 20 acres. Some 12 years back he borrowed the small sum of Rs. 25/- on the occasion of his son's marriage. After three years, having repaid neither capital nor interest, he executed a fresh bond of Rs. 50/-; after the lapse of another three years his creditor demanded repayment or in lieu thereof the cession to him of one acre of land. The debtor refused and borrowed from another man the sum of Rs. 100/- to repay the loan. This amount, being less by Rs. 12/8/- than the principal and the interest due, was refused by the money-lender, and while Umedali was wondering whence the balance might be obtained, he squandered the whole amount. His debts now exceed Rs. 500/-, the 12 years' growth of a loan of Rs. 25/-."

Survey and Settlement Report of Dacca, p. 46.

expenditure upon domestic ceremonies. Thus Jack, in his *Economic Life of a Bengal District*, (page 100) writes: "The great majority of agricultural debtors get into the debt through improvident expenditure upon domestic ceremonies and in particular upon marriages. The sum spent upon the marriage of a son or a daughter, both by Hindus and Mahomedans of the cultivating class, is quite out of proportion to the incomes of the families. It is no uncommon thing for a whole or a half year's income to be spent of which a great part goes upon entertaining guests. Each cultivator, specially among the Mahomedans, tries to make a greater display than was made at the previous marriage in the village, and in order to to do so, many have to borrow money on an extravagant scale." While the statement contains some amount of truth, it is difficult to accept it without modification. It is no doubt true that a large proportion of the debts of the agricultural classes owes its origin to borrowing at the time of marriages. Thus, in a detailed economic survey of a typical village in Faridpur made by Mr. Burrows, the Collector of the district, it was found that 57% of the debt was incurred for marriages, 18% for the purchase of cattle or land and the rest for various other reasons.[1] But it is unfair to bring the charge of extravagance against the cultivators in the manner in which Jack does it. The expenditure on the occasion of a marriage may appear to a foreigner like him extravagant, but in reality, under the social system in which the cultivators, both Hindus and Mahomedans, live in this province, it is almost binding on the person at whose house this ceremony takes place. There is no spirit of competition even

[1] Evidence of Mr. Burrows before the Royal Commission on Indian Agriculture, Vol. IV., p. 489.

amongst the Mahomedan cultivators in respect of the splendour with which it is performed, as is alleged in the above statement. That it contains some exaggeration is proved by the fact that in framing the family budget of these classes of people Jack himself takes a sum of Rs. 42 as the average expenditure on a marriage.[1]

The real defect lies in the general absence of the habits of thrift.

The real defect lies not so much in the expenditure incurred at the time of a marriage or other social ceremonies as in the general absence of the habits of saving among the agricultural classes. Cultivators in this province have little power of realising the future ; and, as a consequence, they do not save, even when there is a savable surplus in the income. It has been stated before that there is a large proportion of the cultivating classes which spends rather lavishly after the annual harvest is reaped and is regularly in the habit of borrowing towards the end of the year. Another important reason why the cultivators do not generally save is that there does not exist in the rural areas any suitable organisation which offers them the facility for saving. The Post Office savings banks and the co-operative credit societies are practically the only institutions where they can deposit their savings. But it should be remembered that the number of these institutions is too small for any appreciable proportion of the people of these classes to take advantage of them. Moreover, their general illiteracy constitutes a serious handicap to them in this respect. Often when a Post Office savings bank is within easy reach of a cultivator, he is unable to open an account with it, because he does not know how to read and write. A special cause tending to check savings amongst the Mahomedans in

Some factors affecting savings by cultivators.

[1] Economic Life of a Bengal District, p. 64.

the province is the prohibition of interest by the Mahomedan scriptures. The postponement of present enjoyment, which is involved in saving, is a tedious thing, and, other things being equal, a man does not like to do it. Interest is one of the forces that overcome this unwillingness and induce people to save. The fact that there is a religious prohibition of interest and that this prohibition is generally observed by the Mahomedans of Bengal tends to weaken their desire for saving. This is one of the reasons why the Mahomedan cultivators in the province are, as a rule, less thrifty and more involved in debt than their Hindu brethren.

The average cultivator, when he has a surplus income, spends it on some ornaments for his wife, or on the improvement of his house, which generally consists in replacing the thatched roofs by those of corrugated iron. In times of need when he cannot obtain a loan on his personal credit and when he does not like to mortgage his land, he can borrow small amounts by pawning the ornaments. Often these ornaments are not released, for if he is unable to recover them within a very short period, the interest charge becomes so heavy that it is no longer profitable for him to do it at all. It is because he does not save anything in normal times that, when a marriage ceremony takes place or when there is some other need for incurring any unusual expenditure, he is obliged to borrow. Thus the real cause of agricultural indebtedness in the province is not extravagance in expenditure on social ceremonies, but the general absence of the habit of saving among the cultivating classes. The expenditure on such ceremonial occasions is less than it is generally supposed to be, and is necessary under the social system in which they live.

As regards the actual extent of agricultural indebtedness, statistics are not available for the entire province, but attempts have been made to form an estimate of it in some of the districts during the survey and settlement operations. Thus, in the district of Faridpur, the total indebtedness was found to be about Rs. 230 lakhs of which more than two-thirds was the share of the agricultural classes. Of the cultivators 45% were in debt, their average burden per family being Rs. 121.[1] The incidence of debt per head of the entire population of the district was Rs. 11 which represented roughly about one-fifth of the annual income. In Dacca, out of a total number of 391,894 families inhabiting homestead plots, 185,869 or more than 47% were involved in debt. The total amount of debt in the district was Rs. 47,600,553, so that the average incidence of debt per family in debt was a little over Rs. 120.[2] According to the Settlement Report of Mymensingh, the average burden of debt per family is estimated to be less than Rs. 100.[3] In Jessore, enquiries were made in 58 villages containing a population of ten thousand and the amount of debt per head of the total population was found to be Rs. 12-2-10.[4] It will be observed that this is slightly higher than the corresponding figure for the district of Faridpur.

Extent of indebtedness.

Although these figures are the results of careful and detailed enquiries, there is strong reason to believe that the actual indebtedness is considerably

[1] Jack, Economic Life of a Bengal District, p. 98.

[2] Survey and Settlement Report of Dacca, p. 47.

[3] It is not clearly stated whether this incidence of debt is calculated by taking all families or only those in debt. The author of the Report seems, however, to mean that it is the burden per family in debt.

[4] Survey and Settlement Report of Jessore, p. 71.

greater than what is indicated by them. This is chiefly due to the fact that a cultivator, in making a statement of his debt, is inclined to conceal it as far as possible, for the sake of maintaining his credit in the market. For, if he reveals his actual position with regard to indebtedness, it may be difficult to obtain further loans when he is in need of them. Nor there is any other source from which correct information on the matter can be easily obtained. The money-lender who has given the loan is not likely to disclose it, for here, the interest of the creditor and that of the debtor are more or less allied. His neighbours also are not generally in a position to supply the correct information, for when he incurs a debt he tries to keep it a secret. The statistics of the Registration Department are also not very useful, for a large proportion of the debts is not secured by registration. The difficulty of the work is all the more increased by the habit of a large proportion of the borrowers—particularly those who are heavily in debt—to have dealings with a number of money-lenders at the same time. That a considerable under-estimation has taken place in arriving at the results given above is also freely admitted by some of the Settlement Officers who conducted the enquiry.[1]

In the economic survey of the Faridpur village made by Mr. Burrows, which has been mentioned above, the amount of indebtedness was found to be much greater than that estimated by the Settlement Officers.[2] Out of 170 families in the village, 107 were in debt to the total extent of Rs. 21780. Of this,

1 See Survey and Settlement Report of Dacca, p. 47; also that of Jessore, p. 71.

2 See App. III to Mr. Burrows' evidence before the Royal Commission on Indian Agriculture, Vol. IV, Bengal Presidency.

Rs. 8276 was borrowed from the co-operative bank in the village and the rest from money-lenders. The incidence of debt was Rs. 24 per head of the population, or Rs. 135 per family. Taking only the population that was involved in debt, the incidence was estimated to be Rs. 43 per head, or Rs. 214 per family. It will be seen that the average indebtedness in this village, as estimated above, is roughly double that in the whole district, as calculated by Jack.

This indebtedness does not represent capital borrowed for the purpose of production except to a small extent.

If this volume of debt represented capital borrowed for the purpose of production, there would be little to say against it. As it has been said above, production of wealth is generally carried on with borrowed capital. Other things being equal, the larger the amount of capital that is profitably applied in production, whatever the nature of the industry may be, the larger is the volume of the national dividend. The interest that is paid for the use of such borrowed capital does not mean any loss to the producers, for it is paid out of the additional productivity resulting from its employment. But agricultural indebtedness in Bengal is mostly the outcome of loans not for production, but for consumption. The normal borrowings of the cultivator for productive purposes are generally of a temporary character. He takes recourse to the money-lender when the agricultural operations have to be performed, and as soon as the crop is marketed, he repays these small and short-term loans. The greater part of the indebtedness we have considered above is of a permanent nature and owes its origin to borrowing for unproductive purposes, such as social ceremonies and litigation. It also consists very largely of accumulated interest which, as we have seen, is frequently added to the principal, when the debtor fails to clear his debt and executes a new bond. Thus agricultural

indebtedness in Bengal does not represent capital borrowed for the purpose of production, except to a limited extent, and with the high rate of interest that has got to be paid for it, it constitutes a heavy burden on the cultivators.

The comparatively small importance of co-operative organisation as an agency for financing agriculture.

The other important agency for the financing of agriculture in the province is the co-operative credit societies. The co-operative movement was introduced in this country, as in many others, mainly to combat the evils arising from the dependence of cultivators on rapacious money-lenders for the supply of loans, and also to inculcate the habits of thrift and self-help amongst them. It was in 1904 that the first Co-operative Credit Societies Act was passed in India, and almost immediately after the passing of the Act, societies began to be started in this province. In the year 1926-27 the number of agricultural credit societies was 13,366 with a total membership of 328,438 and a working capital of Rs. 32,083,931.[1] That the co-operative credit organisation, as it stands at the present time, is entirely insufficient to meet the demand of the province, will be clear from the fact that, in the district of Faridpur alone, there are more than 256 thousand families which live by cultivation and are, therefore, in need of being financed for the purpose.[2] We have seen in the preceding chapter that assuming that the average family consists of five persons, there are altogether somewhat more than 6 million agricultural families in Bengal, apart from the field labourers. As the total membership of co-operative credit societies is only 328,438, this means that only about 5·4 per cent. of the agricultural

Its slow growth.

[1] See Annual Report on the Working of Co-operative Societies in Bengal, 1926-27, pp. 52-53.

[2] Jack, Economic Life of a Bengal District, Table III.

families of Bengal have been as yet brought under the co-operative credit organisation. Again, the total working capital of the agricultural credit co-operative societies was in the year 1926-27 Rs. 32,083,931. This is not even equal to the outstanding loans to the agricultural classes by village money-lenders of a single district like Dacca.

We thus see that, although the co-operative movement has been in existence for nearly a quarter of a century, the progress that has been attained by it up to the present time is entirely insufficient for meeting the requirements of the province. The money-lenders in almost all parts of the province still dominate the situation, and the great majority of the cultivators are in their clasp.

Causes to which it is due.

The main cause of this slow and inadequate progress of the co-operative credit movement in the province is the general illiteracy of the agricultural classes, and their consequent inability to understand easily the principles of co-operation. It is a difficult thing to convince the average cultivator of the benefits of co-operation and persuade him to become a member of a society. It is more difficult to find suitable men in a village who can manage a society with success. While the cultivators have been very slow to realise the potentialities of the movement, the efforts that have been made to popularise it have not been of a systematic and satisfactory character. The work of propaganda and organisation has been mainly left to private initiative which, however, has not been coming forth in an adequate measure. To a certain extent, the slow progress of the co-operative movement is due to the rigidity which marks the loan policy of the credit societies.[1]

[1] See the evidence of Rai J. M. Mitra Bahadur,

It does not infrequently happen that a member is not able to obtain a loan* at the particular time when he requires it. This is specially the case if the society happens to have no funds at the time when the loan is wanted. A member who wants a loan will have first to apply for it to the society. The managing committee of the society will then meet to decide whether the loan is to be granted or not. Then the society will write to the central bank for funds, and by the time the money comes from the central bank to the village society, the need for borrowing by the particular member may have disappeared.

The merit of co-operative credit organisation as a financing agency for agriculture.

For agriculture, as it is carried on in this country, there can be no better method of finance than that by co-operative societies. These societies not only ensure a supply of cheap credit to the small cultivators, but what is more important, they exert a most wholesome influence on the members by promoting the highly important virtues of thrift and self-help amongst them. It is in this moral effect of co-operation that its peculiar value lies, and it is for this reason that it constitutes the most desirable form of agricultural finance for this province. Any sound system of agricultural finance, so far as this province is concerned, must aim at two things. It should be able to supply credit at a sufficiently low rate of interest, and secondly, it should cure the general thriftlessness that prevails among the agricultural population. The supply of credit at a low rate of interest is necessary for the profitable employment of a large amount of capital in the cultivation

Registrar of Co-operative Societies, Bengal, before the Royal Commission on Indian Agriculture, Vol. IV, Bengal Presidency.

of land, and also for the retention of a reasonable share of the produce of the soil by the cultivator. At present we have seen that, owing to the high rate of interest that has got to be paid to the village money-lender, there cannot be made a sufficient employment of capital in agriculture, and, as a consequence, the production of wealth from land is less than what it should be. In the next place, of the wealth that is actually produced, the tiller of the soil is deprived of an unnecessarily large part, because of the unusually heavy interest charge. If the cultivator is to adopt improved agricultural methods, and if he is to enjoy a reasonable share of the produce of the land, it is essential that he should be provided, among other things, with a supply of credit at a sufficiently low rate of interest. But a supply of cheap credit, unaccompanied by the development of the habits of thrift, is almost certain to cause an increase in the demand for unproductive loans. In such a case, the volume of chronic indebtedness, instead of diminishing, is likely to increase.

A more rapid extension of the co-operative movement is necessary for solving the problem of indebtedness.

A more rapid extension of the co-operative credit movement is essential, if the problem of agricultural indebtedness in the province is to be solved within any reasonable limit of time. There does not seem to be any clear indication that the indebtedness of the cultivators to the class of money-lenders has been, on the whole, decreasing. We have seen that, as yet, only an extremely small proportion of them has been brought under the co-operative credit movement. Any reduction of the volume of indebtedness that may have been brought about by these people being financed by the co-operative societies must have been more than offset by the increasing indebtedness of the great majority of the cultivators who still remain outside the movement. It is also note-

worthy in this connection that those who are heavily involved in debt generally belong to this latter class. There is a tendency on the part of most of the cultivators to sink deeper into debt, owing partly to their inability, and partly to their indifference, to repay their loans. The more involved in debt they will be, the more difficult will be the task of the co-operative societies to free them from its crushing burden.

Importance of development on sound lines.

While a rapid progress of the co-operative credit movement is thus desirable for more than one reason, utmost care should be taken to see that the development of the movement takes place on sound lines. This depends very largely on the proper teaching of co-operative principles to the members who form a society. As regards the importance of such teaching, the Maclagan Committee said: "We cannot too strongly urge the necessity for careful teaching both before and after registration. Most of the faults which we have found in societies are due to the lack of such teaching and the importance of the point can scarcely be exaggerated."[1] The Royal Commission on Indian Agriculture also is of the opinion that the neglect of this advice has produced serious consequences in some of the Indian provinces, though not in Bengal.[2] Reviewing the various defects in the progress of the co-operative movement in the different provinces in India, that Commission says in its Report: "The only remedy for these unsatisfactory conditions which appears to offer any sure prospect of success is the patient and persistent education in principles and meaning of co-operation of the members of primary societies by

[1] See Report, p. 20.

[2] Report of the Commission, p. 448.

teachers competent to perform the work efficiently under adequate supervision."[1] This work of teaching requires special training for which the honorary worker has no sufficient time, and it is for this reason that the Commission, while welcoming all assistance from such quarters, recommends that every attempt should be made to build up an efficient staff for this purpose in all the provinces.

The problem of long-term credit in agriculture. This should not be supplied by co-operative societies.

Although the rural co-operative society is the most suitable agency for financing the cultivator for his normal agricultural requirements and also for other purposes, there are some kinds of loans likely to be demanded by him, the provision of which cannot properly be undertaken by it. The working capital of such a society is mainly obtained by short-terms loans, or by deposits liable to be withdrawn at short notice. For this reason, it cannot make its investments in a way which will involve the locking up of its resources for a long time. Thus the proper function of a co-operative credit society is to advance loans to the cultivator for the production of the annual crops. We have seen that these loans are taken at the time when the agricultural operations are performed, and are usually repaid almost as soon as the crop is harvested. A rural society may also include in its operations the advancing of loans for the purchase of cattle and implements, and even for ceremonial and other unproductive purposes ; for although these loans are not intended to be repaid in such a short time as the others, their recovery is not generally so delayed as to involve any serious risk to the society. The loans for unproductive purposes do not indeed come under the category of agricultural credit, but it should be remembered that,

[1] See p. 450.

unless they are granted by the co-operative society, the cultivator will be driven to the necessity of borrowing from the money-lender. A co-operative society, while granting these loans as an unavoidable necessity, should try to see that borrowing by its members for these purposes is as little as possible.[1] In addition to the supply of this short-term credit for these various purposes, it is often necessary to advance to the cultivators loans the recovery of which is neither desirable nor possible in the course of a few months or even a few years. When the cultivator wants to borrow for the purpose of effecting improvements on his land, it is desirable that the repayment of the loan should be made out of the additional productivity resulting from such improvements and, therefore, by means of small instalments spread over a long series of years. To this class also belong the loans for the purchase of costly and durable agricultural machinery. The return from this fixed capital of agriculture also comes in a long and continual flow, and it is desirable that the repayment of the loan, with which it is purchased, should be adjusted to it.

Need for long-term loans.

There is still another purpose for which a large provision of long-term loans to the cultivators is urgently called for. This is to relieve the enormous number of agriculturists in this province who are heavily in debt to the money-lenders. Most of these people incur their debts on the mortgage of land, and at a rate of interest so high that it is largely to this factor that the permanent character of their indebtedness is due. The only effective way to extricate these people from the hands of the *mahajan*

[1] See Report of the Royal Commission on Indian Agriculture, p. 461.

is to supply loans to them on easier terms by which they can redeem their lands, or liquidate their debts when these are unaccompanied by such mortgages. As the amount that will be required for this purpose by individual borrowers will be large, and as it will be applied to the repayment of existing debts, it is essential that these loans should be given at a sufficiently low rate of interest, and that their recovery should be made by annual instalments spread over a long series of years. For, unless the terms are easier, it will afford no relief to the borrower and will not be attractive to him ; and unless the recovery is made by small annual instalments, it will not be possible for him with his present thriftless habits to accumulate by means of savings such a large sum as will be necessary to redeem his debt by a single payment.

Land mortgage banks.

This sort of long-term loans to agriculturists and land-owners is supplied in Germany and other European countries by land mortgage banks, and a number of similar organisations on co-operative lines has recently been established in this country also. The first of its kind was the Jhang Co-operative Land Mortgage Bank in the Punjab, started in the year 1920. It has proved a successful enterprise from the very beginning, and up to the middle of 1925, the area of land redeemed by it was 4536 acres.[1] At the present time there are altogether a dozen banks of this type in that province, while in the Presidency of Madras, the number of such institutions is about fifteen.[2] In this province there is as yet only one

[1] See article by Rai Shaheb N. C. Basu on the 'Jhang Co-operative Land Mortgage Bank', in the Bengal Co-operative Journal, Oct. 1925.

[2] Report of the Royal Commission on Indian Agriculture, page 461.

land mortgage bank, the Naogaon Co-operative Land Mortgage Bank, in the district of Rajshahi, which commenced its work in the year 1925-26. As the problem of agricultural indebtedness and long-term agricultural credit is present in an acute form practically all over the province, it is desirable that such banks should be established in every part of it. The demand for long-term loans from land mortgage banks, provided they are given on easier terms, is likely to come, not only from cultivators, but also from the large number of intermediate tenure-holders in the province, who are also, as a class, seriously involved in debt.

How their funds should be raised.

The business of land mortgage banks consisting in long-term loans, the problem of raising their funds is a difficult one. As the assets of these banks are not easily realisable, an essential condition of the safe and successful conduct of their business is that they should be free from the liability to meet any demand for withdrawal at short notice on the part of those from whom they obtain their resources. The usual way in which land mortgage banks in other countries raise their funds is by the issue of debentures, and in fact, there is hardly any other alternative method of doing it which is more suitable to the purpose of these banks. But the issue of debentures by organisations like mortgage banks which are almost unknown in the province, is not likely to be sufficiently attractive, at least in the initial stages, to the ordinary investors. It has, therefore, been suggested that the Government should guarantee the interest of these debentures for a certain period, and that a sinking fund should be created so as to secure the redemption of these debentures on the expiry of that

period.[1] The issue of these debentures should, however, be made by a central financing body in the province, corresponding to the Provincial Co-operative Bank, rather than by the separate mortgage banks. A number of small institutions, each with its own issues, will invariably lead to a flooding of the market by a competing supply. The rate of interest for these debentures will be forced up by this competition and also for the reason that the security offered by these smaller banks will be lower than that by a large central organisation. From the point of view of control also, the system of issue by separate banks appears to present greater difficulty than the other ; while there is also the important consideration that if some of these banks mismanage their business, the entire system may be brought into disrepute.[2]

[1] Resolution adopted by the 9th Conference of Co-operative Registrars held in Bombay in 1926. The Indian Agricultural Commission also endorses this suggestion in its Report. See Report, p. 464.

[2] Report of the Royal Commission on Indian Agriculture, p. 465

CHAPTER VII

Rural industries

Importance of industries in the economic life of the people.

In the economic life of the people of Bengal, the part played by industries is of comparatively small significance. This will have been clear from the great preponderance of agriculture as a means of livelihood. In a country where 77 per cent. of the population live by raising the produce of the soil, industries cannot but occupy a very minor place in the national economy. As a matter of fact, only 7.6 per cent. of the population of this province are supported by industries. This proportion will be even smaller for the purely rural areas which contain practically none of the modern factory industries of the province. Rural industries almost invariably mean cottage industries, and most of them are still in the domestic stage, being carried on at home by members of the same family. These producers generally own their appliances which are comparatively few and inexpensive. Sometimes they work independently on their own account ; but more often, they are enslaved to a *mahajan* who supplies the raw material, makes advances of money, and receives the finished product at a price in the determination of which the worker has but little voice. In some cases, the business is organised by a master worker in his own house or in some rented workshop with the employment of hired labour, but here also the owner of the workshop is, as a rule, under the influence of a capitalist trader who finances him and is entitled to an exclusive right of the purchase of the product when it is ready for the market.

General character of rural industries.

Of the various cottage industries of rural Bengal, the most important is the handloom cotton weaving. This is one of the oldest industries of this province, and there was a time when it enjoyed a world-wide fame for the wonderful perfection and the exquisite quality of the product. The seat of the celebrated muslin industry was in the city of Dacca and in some of the villages round about it. With the fall of the Mahomedan power in India, this industry, which owed its prosperity largely to the patronage of the Court, began steadily to decline ; while the loss of the foreign markets due to a variety of causes accelerated that movement. At the present time the muslin industry can, for all practical purposes, be regarded as extinct. The cotton from which the yarn was made is not now grown in the province, while that race of highly skilled spinners and weavers has almost completely died out. There are one or two old solitary survivors in the city of Dacca, who now merely cherish the fond memory of producing this artistic fabric in their early youth about half a century before.[1] Muslin of an inferior quality is still produced at Dacca with imported yarn, but the demand even for this cheaper kind of product is extremely limited ; and on the whole, only two or three weavers are at the present time engaged in producing it.

Handloom cotton industry.

Decline of the muslin industry.

While the production of muslin has practically ceased, owing to the lack of patronage and the change in fashion, that of the ordinary quality of cotton fabrics by the handloom weavers has also suffered

[1] Dr. J. C. Sinha in his paper on 'The Dacca Muslin Industry' published in the Modern Review, April, 1925, gives the name of one such old weaver who produced muslin 50 years before.

seriously from the competition of the mill industry, both in foreign countries and in India. This competition has been more ruinous to the spinning than to the weaving side of this cottage industry, for the economies of large scale production with the help of machinery are more pronounced in the former than in the latter. Spinning is a more uniform and standardised process than weaving. The yarn is a raw material, while the cloth is a finished commodity. There is a greater need for variety in the latter to satisfy individual tastes and idiosyncrasies than in the former. We thus find that while the cottage weaving industry has survived to a certain extent the competition of the mills, the domestic spinning industry has almost completely been conquered by them. With the exception of some tracts inhabited by hill tribes, there was practically no domestic spinning done in this province a few years ago. The *charka* movement recently started by Mr. Gandhi has done something to revive this domestic industry, but as yet the progress made does not seem to be very promising. In weaving, the competition of the mills has been, as a rule, too severe in the case of those goods which are in massive demand and uniform in character. The present cotton handloom industry in the province is for this reason more or less confined to the production of goods which satisfy particular tastes or fashions, and are not, therefore, in massive demand or uniform in character.

Domestic spinning.

Seriously crippled as it has been by the competition of the mills, the cotton handloom industry in Bengal is yet of considerable importance. According to the Census Report of 1921, the number of persons dependent on cotton sizing and weaving in Bengal is 497,628, of which 211,354 are actual workers. This also includes persons who work in

the mills ; but their number is quite small, for the cotton mills of Bengal employ only 13,736 operatives of all kinds.[1] On the whole, there will at least be two hundred thousand persons who are employed in the handloom-weaving industry in this province, and the total number supported by it will be more than four hundred and fifty thousand. At the time of the general census, an enumeration of handlooms was also made in 1921, and the total number was found to be 213,886 in Bengal including the small native states of Cooch Behar and Tripura. This was distributed among the different districts in the following way[2] :—

Size of the handloom industry at present.

Number and distribution of handlooms.

District.	No. of handlooms.	District.	No. of handlooms.
Burdwan	3942	Rangpur	404
Birbhum	5844	Pabna	8622
Bankura	8174	Bogra	1865
Midnapore	15276	Malda	1928
Hooghly	5988	Cooch Behar ...	2083
Howrah	1099	Dacca	11798
24-Parganas ...	972	Mymensingh ...	11629
Nadia	4925	Faridpur	7962
Murshidabad ...	7361	Backerganj ...	6929
Jessore	6932	Tippera	12432
Khulna	3762	Noakhali	9031
Rajshahi	497	Chittagong ...	6818
Dinajpur	3929	Chittagong Hill Tracts	29190
Jalpaigury	2545		
Darjeeling	464	Tripura State ...	31485

It will be seen from the table given above that handloom weaving is carried on to a varying extent in all the districts of the province. The number of handlooms possessed by Chittagong Hill Tracts is remarkable. This is chiefly due to the fact that the

[1] Bengal Census Report, 1921, p. 400.
[2] Ibid.

people inhabiting this hilly region have not as yet developed any great love for the finer products of the mills, and are still fairly self-sufficient in respect of clothing. The handloom weaver in most of the districts is, however, dependent on the mills for the supply of yarn. If the mill-spun yarn were not available to the cottage weaver, it would be an extremely difficult thing for him to continue his existence in the face of the mill competition. We thus see that although the competition of the mills has practically destroyed domestic spinning and has also very seriously affected cottage weaving in Bengal, it is the cheap supply of yarn by the mills which has kept alive that part of the industry which is still in the hands of the handloom weavers.

Dacca is still the largest centre in the production of high-class goods.

In producing high-class *saries, dhuties* and other piece-goods, Dacca is still considerably ahead of the other districts of the province. Although the muslin industry is now no longer in existence, the weavers in the city of Dacca as well as in many of the villages in the neighbourhood possess a high degree of skill in the manufacture of various kinds of cotton goods. Even at the present time in Abdulapur, Mireswarai, Demra, Siddhiganj, Nawpara, Katchpur and other villages, *saries* are produced often of the value of Rs. 50 or more per piece. The finer articles produced by the handloom weavers in the district of Dacca may be divided into two broad classes:—*jamdanies* or figured goods and those with plain bodies. The former is a characteristic product of the Dacca district and is not produced anywhere else in the province. The ornamentation of the body with various floral designs is done, not with needles after the weaving is finished, but by the loom itself during the process. Ordinarily, *saries, uranis* and pieces for making garments are

ornamented with this kind of embroidery, while *dhuties*, which are worn by males, are of a plain character. In the case of the more costly varieties of *jamdanies* as well as of plain goods, the borders are generally made of gold or silver thread with various kinds of designs. Cotton fabrics of a high quality are also produced by handloom weavers in other parts of the province. Thus Santipur in Nadia, and Tangail in the district of Mymensingh, are noted for the fineness and artistic character of *dhuties*, *saries* and other kinds of goods produced there.

Other centres of production.

These artistic products of the handloom cotton industry has a limited but real demand in practically all parts of the province. They are not ordinarily used except by the very rich people, but on occasions of marriage and other social and religious ceremonies, they are worn by the greater part of the middle-class population as articles of luxury and distinction. As the price has a wide range of variation from Rs. 5 to Rs. 100, it suits the incomes of different classes of people in society. While the big zamindar purchases for his wife or daughter a *sari* of the value of Rs. 100, a clerk in a government or merchant office with his modest income is able to buy one for Rs. 5.

The demand for high class goods.

In respect of magnitude, the coarser branch of the handloom industry which produces the ordinary *saries*, *lungis*, mosquito curtain pieces, *chadars*, *gamchas*, etc., is much more important. The former class of goods is too expensive for the great mass of the people, which looks more to the cheapness and durability of articles than to the beauty of design or fineness of texture. These coarser articles of the handloom industry, while they are fairly cheap and durable, offer to the consumers a great

The coarser branch of the industry.

variety of colour and design, and are, therefore, more suited to particular tastes or fashions than the standardised products of the mill industry. In the production of many of these goods, the handloom weaver seems to hold his own against the competition of the mills.

Condition of the handloom weaver.

Yet, on the whole, the condition of the handloom cotton industry is far from satisfactory. The average earnings of the cotton weaver will not exceed Rs. 20 a month. Considering the fact that he has to supply some capital for his business, his condition is not much better than that of the unskilled labourer. It is for this reason that an increasing proportion of the weavers in the province is giving up the hereditary occupation and is becoming dependent on agriculture. The number of persons supported by cotton sizing and weaving in Bengal in 1921 was considerably less than what it was in 1911. This diminution took place in spite of an increase in the number of persons employed by the cotton mills. Amongst the Jugis (Hindu weaving caste), out of every 1000 workers, only 435 are engaged in the caste occupation, while as many as 354 are employed in agriculture.[1]

Causes of the decline of the industry. Competition of factories

It has been stated before that the present decadent condition of the handloom industry has been mainly brought about by the competition of the mills. Besides this external factor, there are some defects in the organisation of the industry itself which are responsible in no small measure for the adverse economic condition of the cottage weavers.

Methods of production.

With regard to technique, it is still in a very backward state: out of 213,886 handlooms in

[1] Bengal Census Report, 1921, p. 430.

the province, only 53,168 were in 1921 with fly-shuttles, the rest being all of the primitive type.[1] There is practically no other improved appliance which has been adopted by the handloom weaver, so that, with the exception of this comparatively small number of fly-shuttle looms, the methods of weaving may be said to be exactly the same as they were half a century before. The prospect of this important cottage industry and the condition of the workers can be substantially improved by the adoption of modern improved appliances.

Organisation as regards finance, supply of raw materials, and marketing.

The organisation of the industry is also defective in respect of finance, supply of raw materials, and marketing of finished products. In the majority of cases these things are done through the *mahajan*. He supplies the raw materials, makes advances of money to the weaver during the process of production, and receives the product when it is finished. For the advance of money he does not usually charge any interest ; but he recoups himself for this, partly, by realising a high price for the yarn and other raw materials supplied by him, and partly, by buying the product at a price much below what is fair and reasonable. The weaver is not free to sell his product to whomsoever he likes, so that he may obtain the best price for it. He is generally tied to a particular *mahajan* who finances him, and to whom he always owes some money which he has received in the shape of advances. If he feels that he is getting for his finished products an unduly low price and tries to sell them to some other person, his *mahajan* will at once demand the repayment of all the money that has been advanced. It is chiefly for this reason that he accepts the price offered by

[1] Bengal Census Report, 1921, pp. 400—1.

the *mahajan*, even though he knows that it is much below what the product is really worth. It will thus be seen that the financing of the weaver by the *mahajan* deprives him of a substantial part of the fruits of his labour. Sometimes the *mahajan* supplies the raw materials on his own account and receives the finished product after paying the weavers merely a *bani, i.e.*, a remuneration for his labour according to piece rates. In such cases the weaver is merely a wage-earner working under the *mahajan* who is really the businessman.

Suggestions for improvement.

For the improvement of this important cottage industry of the province, the first thing that is necessary is the introduction of modern methods of production. In the second place, the exploitation of the weaver by the *mahajan* should be prevented by a better organisation both as regards finance and marketing. A change in the methods of production requires, among other things, that the weavers should be taught improved processes with the help of up-to-date appliances. There is some arrangement for imparting weaving instruction in the province, but it is entirely insufficient for its requirement. Moreover, those who actually come to receive this instruction are not generally members of the weaving classes at the present time. They are mostly middle-class young men who are being driven to it by the increased struggle for existence amongst the members of this class. If, however, these middle-class young men are successful in starting small businesses in the rural areas, it will, in course of time, help to familiarise the cottage weavers with improved appliances and methods of production. But this will certainly be a slow process, and it is desirable that a more rapid progress in this direction

should be attained by directly providing instruction to members of the weaving castes.

Introduction of improved appliances of production also involves the question of finance. The cottage weaver is generally an extremely poor man, and unless he is provided with loans for the purpose, it will not be possible for him to purchase those new appliances. At the same time he also requires to be financed for purchasing raw materials and for other purposes. This is now being done by the *mahajan* who also supplies raw materials and purchases the finished product. But we have seen that this connection of the weaver with the *mahajan* is one of the chief causes of his poverty. If the lot of the cottage weavers is to be improved, it is not only necessary that better methods of production should be adopted, but also that he should be freed from this dependence on the *mahajan* for all these things. But the emancipation of the weavers from the hands of the *mahajans* will also make it necessary that they should repay their debt to them, and for this purpose, further loans on easier terms should be provided. The only method which promises a successful solution of all these different problems is an extension of the co-operative movement amongst the weavers. The supply of raw materials and improved appliances, the provision of easy loans for the purpose of production as well as for redeeming the existing debt to the *mahajan*, and the marketing of the product can very well be undertaken by co-operative societies started for these purposes.[1] The

[1] The debt of the weavers to the *mahajan* is generally much less than that of the cultivators to the money-lenders. For the purpose of redeeming this debt, it is not therefore necessary that separate institutions like land mortgage banks should be started.

co-operative movement has already made some progress in this direction ; but as yet it is extremely insufficient for the needs of the entire province. The number of weavers' societies of all kinds in Bengal was in 1926-27 only 260 with a total membership of 4394, and a total working capital of Rs. 297,672.[1] Moreover, these societies have not as yet undertaken all the functions that have been mentioned above. They generally concern themselves with the supply of raw materials and the marketing of the finished product. But the other functions can be taken up by them, or new societies can be started for the purpose if it is required.

The silk industry.

The other textile industry in the rural areas is the production of silk yarn and fabrics by the cottage workers. The magnitude of this industry is, however, very much smaller than that of the handloom cotton industry. The total number of persons who are dependent on the spinning and weaving of silk was only 13,587 in 1921.[2] Of this number, a proportion was employed in organised establishments of comparatively small size. In 1921 there were one silk mill and 71 silk filatures, the latter employing twenty or more persons each.[3]

Its importance in the past.

The silk industry of Bengal was in the past in a highly flourishing condition. Indeed, it is difficult to realise from its present moribund state the prosperity which it enjoyed even so late as half a century before. The raw silk and the finished silk goods produced by the cottage workers in Bengal were in high demand not only in the markets of India, but also in many of the countries of Europe and Asia.

1 Annual Report on the Working of Co-operative Societies in Bengal, 1926-27.

2 Census Report of Bengal, 1921, p. 402.

3 *Ibid.*, p. 434.

Testimony to the flourishing condition of the industry is found in the writings of European travellers like Bernier and Tavernier. The latter writes in his account of his travels in Bengal that Kashimbazar alone could annually furnish about 2,200,000 lbs. of silk yarns for export to foreign countries.[1] Between 1776 and 1785 the import of Bengal silk to England was 560,285 lbs., while that from Italy, Turkey and other countries averaged only 282,304 lbs.[2] There are several districts in Bengal where the industry was once carried on on an extensive scale but where there is hardly any trace of it at the present time. In the middle of the 19th century Jessore was one of the most important centres of the silk industry; but now it has become practically extinct there.[3] In the districts of Murshidabad, Rajshahi and Midnapore, there are still found numerous traces of the extensive cultivation of mulberry and of the production of raw silk by means of the native reeling basins, called *ghais*. The rate at which the decline of the industry is still proceeding will be realised from the following figures:— Its decline.

Persons supported by the spinning and weaving of silk in Bengal.[4]

1901	1911	1921
50,393	48,783	13,587

It will be seen that in the course of 20 years, the number of persons supported by the silk industry

1 Tavernier's travels in India by Crooke, Vol. II, p. 2.

2 Report on the Silk Industry in India by Maxwell-Lefroy, p. 9.

3 Decline of the Silk Industry in Bengal, by R. Ghosh, p. 2.

4 Bengal Census Report, 1921, p. 423.

in Bengal has nearly fallen to one-fourth of what it was in 1901. In 1901, 78,446 persons were dependent on the rearing of birds, bees and silk worms. The number of such persons fell to 42,659 in 1911, and to 14,502 in 1921.[1] This fall may be taken to be almost entirely due to the decrease in the number of persons dependent on the rearing of silk worms, for the number engaged in raising the other small creatures mentioned above is quite insignificant. In the census of 1921, these persons were counted separately, and were found to be only 11 in the entire province.[2]

Causes of decline.

The decline of the silk industry of Bengal began in the early seventies of the last century. It was about this time that pebrine—the silk-worm disease which had already caused havoc in the sericultural industry in European countries—made its appearance in India.[3] But while this pestilence was successfully combated in those foreign countries by a scientific selection of disease-free seeds, nothing was done in this country to protect the industry from its attack.

Silk-worm disease.

In addition to this, there was also a number of causes which were responsible for the decline of the industry in this country. In most of these foreign countries, considerable progress was also made in the scientific rearing of silk worms as well as in the methods of reeling. No such improvement did, however, take place in this province, as in other parts of India. As a result of these various causes, not only the cost of production of silk in foreign countries perceptibly diminished, but also the quality of their

1 Bengal Census Report, 1921, p. 402.

2 *Ibid.*

3 Report on the Silk Industry in India by Maxwell-Lefroy, pp. 9-10.

product became superior to that of Bengal silk. The demand for this silk in the European markets thus steadily declined and its place was taken by the better products of other countries. After 1872, there was a continued fall in the price of silk in the world market, mainly due to an increase in [illegible] made possible by the improved methods of rearing silk worms. In addition to this general fall experienced in all countries, there was a special reduction in price in the case of the Bengal product on account of its deterioration in quality. The producers of raw silk in this province, comprising both the rearers of silk worms and the reelers of cocoons, thus found that, on the one hand, their out-turn diminished, and on the other, the price of their product became gradually lower. They were therefore compelled by this growing unprofitableness of their business to give it up in favour of other occupations.

Competition of other countries.

Like the sister textile industry of cotton, the silk industry of rural Bengal is essentially carried on in the homes of the workers. The production of silk fabrics consists of a number of successive stages from the cultivation of mulberry plants to the final weaving of finished articles. These stages are mutually dependent on one another, and consequently, the prosperity of any one is largely bound up with that of the others. The cottage industry proper consists of the later two stages—the production of the silk yarn from the cocoons and its conversion into cloth by the weaver. The former is called reeling—a process by which the continuous delicate filament contained in the cocoon is unwound from it and is combined with a number of others,

Different branches of the industry.

thus released, into a stronger thread which forms the ordinary raw silk of commerce.

Reeling. Reeling of silk in this province is generally carried on in crude ways by means of the country *ghais*. The reeler buys the cocoons in the neighbouring *hat* and sometimes from the rearers direct, and after 'stifling' them in the sun stores them in his house for being gradually used up. The dried cocoons at the time of reeling have to be cooked in boiling water. This is done by putting them in a basin of water heated directly by fire. When the cooking is done, the cocoons have to be transferred to the reeling basin and have to be kept in boiling water with a lower temperature during the process of reeling. In Bengal the same basin is generally used both for cooking and reeling, so that the cocoons, being subjected throughout to the higher temperature required for cooking, are overheated. This has a very harmful effect on the quality of the fibre, particularly in respect of its elasticity and tenacity. A man sits by the basin and throws a number of filaments from the cocoons over the *ghai*. He has constantly to watch the thread as it passes on to the *ghai* ; and whenever a filament is broken or a cocoon exhausted, he has to connect the broken filament, or to replace the exhausted cocoon by a new one, as the case may be. This has to be done very carefully, for any negligence on the part of the reeler in doing it impairs the uniformity of the yarn in the same skein. The thread after passing through a hole and crossing a number of times is wound up on the reel which is turned by a boy. The uniformity of the thread is an important quality of the silk from the standpoint of the manufacturer. This, however, cannot be detected by examining the

skein when reeling is over, and thus depends on the conscientious work on the part of the man who operates the reeling basin.

At the present time, it is only in the district of Malda that silk-reeling is conducted on an extensive scale. According to a survey recently made by the Director of Industries, Bengal, there are 1787 country *ghais* in that district.[1] Malda is also the only district where mulberry cultivation and sericulture are still carried on to a considerable extent. In most of the other silk-producing districts of the province, such as Murshidabad, Rajshahi, Bogra, Midnapore and Birbhum, both sericulture and silk-reeling, which once formed important occupations of the people, have largely been abandoned, owing to the causes we have studied above. Reeling of silk was formerly conducted by European firms in small filatures all over the silk-producing area in the province, but most of these filatures have been closed down in the course of the last 20 or 25 years.

Silk-producing districts.

Marketing of raw silk in Bengal is practically in the hands of Marwari merchants at the present time. The reeler has to stock the dried cocoons which are available in particular seasons of the year; and this requires the command of a certain amount of capital. This capital is advanced by the Marwari dealers who receive in return the raw silk when it is produced. The merchant buys the yarn outright from the reeler at a price which leaves little profit to the latter. Sometimes the reeler delivers the product to him for the purpose of marketing, and when this is done, the accounts are adjusted after the silk is sold. As the reeler has no means of

Marketing of raw silk.

1 Survey of Cottage Industries in Bengal by D. B. Meek, p. 84.

knowing the exact rate at which the sale is effected, it is quite possible that he is cheated by the merchant in respect of the price actually received. It will thus be seen that the present marketing organisation in the silk-reeling industry is far from satisfactory and that there is a great scope for the expansion of the co-operative movement in this direction. Co-operative marketing of raw silk has hardly been begun in this province, the number of reelers' societies being only two in 1926-27.[1]

Improvement of sericulture.

If the sericultural industry be revived, it can form a suitable occupation for the rural people in many of the districts of Northern and Western Bengal. The climatic conditions are not unfavourable either to the cultivation of mulberry, or to the rearing of silk worms. We have seen that the principal cause of the decline of the industry was the defective methods of production. For a revival of the industry what is necessary is that both sericulture and the reeling of silk should be conducted on modern lines. It is important to point out that in both these branches of the industry, the economies of large scale production are not very important; and even in such advanced silk-producing countries as France, Italy and Japan, the small producer is still holding his own. The Department of Agriculture in the province has recently directed its attention to resuscitate the industry by introducing modern methods of rearing silk worms. The activities of the Department in this connection may be stated to be on the following lines[2]:—

Activities of the Department of Agriculture.

(*a*) improvement of the various breeds of silk

1 Report on the Working of Co-operative Societies in Bengal, 1926-27.

2 Report on the Sericultural Operations in Bengal, 1926-27.

worms raised in this province through the application of the cellular system of microscopic examination discovered by Pasteur ;

(*b*) production and distribution of the selected strains of seeds through Government nurseries and through selected rearers working as seed-growers under Government supervision ;

(*c*) training of the sons of silk-worm rearers through sericultural schools, and primary classes attached to Government nurseries ;

(*d*) village propaganda and demonstration conducted in rearing areas with a veiw to educate the rearers in the methods of rearing.

The activities of the Department are already being appreciated by the rearers. The demand for improved seeds is increasing and many rearers in the silk districts have fitted up the doors and windows of the rearing houses with wire nets so as to keep out flies and at the same time to have proper ventilation. The sale of sulphur and other disinfectants has also been increasing in these areas.

The silk industry in the rural areas, as it has been stated before, also consists of the weaving of finished goods. Like sericulture and silk-reeling, this branch of the industry also has been in a steadily declining condition. The export of silk fabrics to foreign countries has been greatly reduced owing mainly to severe competition of other countries, such as Japan, China, France and Italy. The introduction of improved methods of weaving, combined with the better quality of the yarn produced in

Silk weaving.

these countries, has placed them in a very favourable position in the world markets as against the products of this country ; and as a result, our producers have been losing ground. Not only the foreign markets have been largely lost, the competition of these foreign countries is also being seriously felt within India. Every year a large quantity of silk goods is imported into this country in spite of a fairly heavy import duty.

It is a home industry like handloom cotton-weaving.

Weaving of silk in Bengal is now carried on mostly in the districts of Murshidabad, Bankura, Birbhum, Burdwan, Rajshahi and Bogra. The industry is mainly confined to the production of *saries, dhuties, chadars* and *thans*—articles which are demanded by consumers in India. As regards organisation and methods of production, it is very much like the handloom cotton industry. The weavers almost invariably work in their homes, each family possessing one or two looms according to the number of working members in it. In some cases the weaver buys the raw silk and sells the finished product himself ; but generally, there is a middleman who supplies the yarn, makes advances of money to the weaver, and in return, receives the product when it is ready. It is superfluous to point out that this intervention of the *mahajan* or middleman deprives the weaver of a part of the profits. Thus in this textile industry of rural Bengal also, there is a scope for the introduction and expansion of co-operative finance and marketing as in the handloom cotton industry. The loom used by the silk weaver is almost without exception the primitive throw-shuttle loom. In this respect, the cottage silk industry is even behind the handloom cotton industry where, as we have seen, the fly-shuttle loom has

Methods of production and organisation.

been introduced to a certain extent. The weavers believe that the employment of fly-shuttle looms in the weaving of silk is not possible owing to the delicate nature of the yarn. It is necessary to point out here that in other silk-producing countries the primitive throw-shuttle loom has long been discarded in favour of modern improved ones. Nevertheless, there may be some truth in this view of the hand-loom silk weavers, owing to the particular character of the yarn used by them. In this province, the silk weaver generally uses the raw silk which is produced locally ; and we have seen that, owing to inefficient methods of reeling, the yarn produced becomes defective in respect of uniformity, strength and elasticity. These defects in the quality of the yarn can, however, be removed by better methods of reeling, and when this is effected, there is no reason why the cottage silk weaver in Bengal should not be able to use looms of an improved type like those used by his fellow-producer in other countries.

Brass and bell-metal industry.

Manufacture of brass and bell-metal utensils forms another rural industry in Bengal. These articles are very commonly used by almost all classes of people excepting the very poor who cannot afford to purchase them. The number of persons supported by this industry in Bengal was 36,474 in 1921, the corresponding figures for 1911 and 1901 being 48,261 and 32,147 respectively.[1] It will be seen that there was a decline in this industry also in the decade from 1911 to 1921, so far as it can be judged from the number of persons supported by it. The number in 1921 was, however, considerably greater than what it was at the beginning of the present century. There is no direct foreign competition in

[1] Bengal Census Report, 1921, p. 424.

this rural industry, for as yet these brass, copper and bell-metal utensils are not imported from any foreign country. One reason for this absence of external competition seems to be that the bulk of these articles relatively to their price is such as would involve a high cost of transport and would, therefore, raise considerably the supply price of any foreign competitor. There is also the fact that the domestic producer largely uses as his raw material the broken utensils obtained at a cheap rate from the consumers. He melts these old wares and with the metal obtained in this way manufactures new ones. The fact is also significant that in the case of the majority of these articles, the price of the raw material forms a very important part of the total cost of production. An indirect competition does, however, exist in the form of aluminium and enamelled iron wares, but as yet, this competition is not very serious ; nor is there any great probability of its being so in the near future for a number of reasons. In the first place, the orthodox Hindus have a strong prejudice against these imported wares which they believe to be made of impure materials. Then there are also inherent qualities possessed by the internal products for which people value them much. These brass and bell-metal commodities are very durable ; and therefore, though at the time of purchase they appear to be expensive, in the long run, they are not so and are in fact much cheaper than the imported substitutes. When the enamelled or aluminium wares are broken, they are absolutely useless, but when these utensils are worn out, they still fetch a price to the consumers. It has been noted above that these broken or old utensils are purchased by the manufacturers for

Competition of factory products.

using them as raw material in the production of new articles.

The production of these brass and bell-metal wares is carried on in most of the districts of the province ; but of these, the more important are Murshidabad, Midnapore, Rajshahi, Bankura, Malda, Dacca and Mymensingh. For the character of design as well as for the excellence of polish, the products of Khagra, in Murshidabad, stand unrivalled, although there are many other places where quite high class articles are produced. The largest centre of the industry in Bengal is, however, a village named Kharar, in the district of Midnapore, which contains no less than one hundred workshops, all engaged in producing these utensils. These workshops are owned by capitalist employers, called *mahajans,* and some of them are so large as to employ from 70 to 80 workmen each. There is a fairly elaborate division of labour in them, and altogether there are about 6 or 7 different processes performed by specialised labour. In Khagra, there are nearly 50 small workshops each employing on the average about 8 persons. These workshops in the Murshidabad centre of the industry are not directly owned by *mahajans* but by master workers who are, however, under their influence.

Important centres of the industry.

It will be clear from above that the manufacture of brass and bell-metal utensils in rural Bengal is not essentially a home industry. In the majority of cases, production is carried on in small workshops with the employment of hired labour. The business is generally owned by a master worker under whom work the members of his family and also a number of outside labourers who receive their wages. The master worker is almost invariably bound to some *mahajan*

Organisation.

in respect of finance, supply of raw materials and marketing of products. Often the *mahajan* supplies the raw materials on his own account and receives the finished products after paying the manufacturer a remuneration in the shape of wages according to the kind and weight of the articles produced. In this latter case, the master worker pays in his turn a lower rate of wages to his employees and receives as his own earnings the surplus that remains. The economic condition of the workers in this industry, though not satisfactory, seems to be better than that of persons engaged in many other cottage industries ; but it should be remembered that the work in this industry involves very strenuous exertion.

Methods of production.

There are generally two principal ways in which these domestic utensils of various kinds are manufactured in the province—by hammering and by casting into moulds. Bell-metal wares, such as plates, cups, bowls, are almost exclusively made by the first method. As it has been said before, the raw material is generally obtained by melting old vessels. The ingot that is thus obtained is alternately heated in the furnace and hammered on the anvil until it is fashioned into the required shape. This repeated heating is necessary because the metal cannot be beaten into shape, unless it is hot. When this is done, the articles are scraped with sharp tools and the final scraping and polishing are done by means of a crude hand lathe. Production by casting into moulds does not involve so much muscular strain, and is generally followed in the case of articles made of *bharan*—an alloy prepared from brass, copper and zinc. This method is also followed in the production of the comparatively heavier articles of brass and bell-metal. Here also

the final polishing is done by means of the country lathe. In the case of a large number of brass articles, such as pitchers, *lotas* and bowls, the raw material used is not obtained by melting old utensils but by purchasing ready-made brass sheets from the market. Where these sheets are used, the process of manufacture is always by means of hammering. The methods of production are yet very crude and unscientific and admit of considerable improvement. With the exception of the lathe, there is practically no labour-saving device that is at present used. The lathe also is defective in construction and involves the waste of a good deal of power when it is worked. The process of hammering by hand means an enormous strain on human muscles, and consequently, a worker is compelled to take a day's rest after every two or three days' work. If this operation can be performed by a mechanical hammer driven by some small engine, not only this strain on the muscles of the worker can be avoided, but also the cost of production can be reduced. But this can only be done in workshops of comparatively large size. As regards the organisation of the industry, we have seen that it is largely dominated by the *mahajan*, as is the case in many other rural industries. But it seems that he does not exploit the workers in this industry to the extent to which he does it in others.

Improvement.

One of the most typical of rural industries of Bengal is the manufacture of earthenware by the village potters. The number of persons dependent on it was 197,357 in 1921, the figures for 1911 and 1901 being respectively 189,736 and 175,383. It will be seen that this rural industry supports a much larger population than either the silk or the brass

Manufacture of earthenware.

and bell-metal industry. It will also be noticed that unlike the industries we have studied above, it shows in this respect a continued progress throughout this period. The explanation of this fact is that the production of these articles has not suffered from external competition to the extent to which other rural industries have. The products of this industry still constitute by far the cheapest domestic utensils for the great mass of the poor people. It has been already stated that brass and bell-metal articles cannot often be purchased by them on account of their high price. Aluminium wares also are almost equally dear, while they are less durable. The only imported articles which are used by the people as substitutes for these earthen products are the enamelled iron wares. But even these are fairly expensive to them, and are not, therefore, used except to a small extent. Moreover, there are some domestic purposes for which the articles manufactured by the village potters are best ; for this reason, they are used by almost all classes alike. Thus for cooking rice, the earthen *handi* is always preferred to the vessels made of metal, because rice, when cooked in the former, always gives a much better taste than when cooked in the latter. There are also other kinds of articles made by the village potter for which no substitute has as yet made its appearance in the market.

The production of these things is purely a home industry in the province, and a large proportion of the workers consists of women and children. The methods of production are still the same as they have been in the past. The country potters have absolutely no idea about modern improved branches of pottery. They use as raw materials sand and clay

which they obtain either free or at a nominal price. Articles are made with the help of the primitive potter's wheel which is kept moving round a fixed vertical axle, while the operator goes on fashioning them. They are then dried in the sun and burnt. It seems that for the kind of things ordinarily demanded by the people, the present methods of the country potters are on the whole quite satisfactory. The articles produced by them may not be graceful and artistic, but they serve their purpose quite well, and they have this redeeming feature that they are very cheap. **Methods of production.**

This industry is exclusively carried on by the Kumbhakars. Members of other castes have not as yet taken to it, as in the case of many others. Potters are found all over the rural areas ; and the articles made by them, being things of very common use to the great mass of people, are available in every rural market, whether a *hat* or a *bazar*. The decentralised character of the industry is chiefly due to the fact that these things do not bear long transport, because they are very liable to breakage, and also for the reason that they contain small value in great bulk. As the articles are generally sold in the neighbourhood of the place where they are produced, their marketing does not require any complex organisation, and so the *mahajan* does not find any great scope for exploiting the workers. The economic condition of the potters is generally much better than that of the workers in most of the cottage industries in the province. **Marketing.**

Another rural industry in the province is the manufacture of various articles of iron by the blacksmiths. This is also an essentially home industry, the smith working in his home with the help of the **Manufacture of articles of iron.**

members of his own family. Ordinarily, he produces and repairs agricultural implements and also various other articles required by the rural people. A typical smithy in the rural areas consists of a forge, an anvil, and a few other implements, such as hammers, files, forceps and chisels. The smith generally makes things to order, and is not, therefore, much troubled about the marketing of products. For his forge he uses invariably wood charcoal which he procures by door-to-door purchase in his village. The growing scarcity of wood fuel in most parts of the province has been raising the price of this raw material used by the smith. The other raw materials used are iron and steel, both of which are partly manufactured products of the factory industry in foreign countries as well as in India. We thus find that in this cottage industry also, some branches of the organised industry are actually helping the cottage workers to carry on their business by supplying at a low price half-manufactured raw materials in convenient forms. Like the potters, the blacksmiths also are, as a class, independent of the *mahajan* and are comparatively well off. The earnings of the average blacksmith will be about Rs. 20 a month; a skilled worker in cutlery can earn about Rs. 30. High class cutlery is produced in various places in the province, of which may be mentioned Kanchannagar in Burdwan, Uzirpur and Barapaika in Backerganj, Dattapara in Noakhali and Brahmanbaria in Tippera. The articles manufactured in these places have a reputation extending much beyond their immediate neighbourhood. The industry at Kanchannagar is not, however, a home industry, but is a highly organised one. Some of the articles produced at

this place compare quite favourably, both in quality and price, with similar things imported from foreign countries.

A large number of persons in the rural areas is engaged in husking rice. The Bengalis are almost without exception a rice-eating people; and although the majority of the cultivating classes themselves husk the rice they require for their household consumption, it forms an important rural industry in the province. In 1921, there were 283,913 persons dependent on the husking and pounding of paddy and the grinding of flour. Of these, more than 90 per cent. were supported by the husking of rice carried on in the rural areas by persons working at home. The great majority of the workers are women. Out of the 283,913 persons supported by the pounding and husking of rice and the grinding of flour in 1921 in the province, no less than 171,844 were women workers and only 15,791 were male workers, the remaining 96,278 being dependents. This small proportion of dependents is chiefly due to the fact that most of the workers are women who have, as a rule, fewer dependents than men. Rice-husking, as a means of livelihood, is generally followed by women who have no male earning member in the family. Sometimes they buy paddy and sell the rice after it is husked; but more often, the paddy is supplied to them by others and they receive only a remuneration for their labour. The remuneration is generally paid not in cash, but in the rice that is husked. A woman can in this way earn about one and a half seers of rice in a day, with which she can somehow maintain herself and one or two small children.

Husking of rice.

Mainly carried on by women.

Husking is done by means of the *dhenki* which

Methods of production.

is a crude lever-like implement made of wood. It is supported by a rigidly fixed cross piece resting on two small posts working like fulcrums. Near its head, there is another piece of wood, also fixed rigidly, which proceeds downwards and falling on the paddy, as the head of the *dhenki* is dropped, separates by its pressure the husk from the grain. Two persons are required to work it, one sitting near its head constantly turns the paddy by the hand as husking goes on, while the other alternately raises and drops the head of the implement by pressing down the other end with the foot and releasing it the next moment. The *dhenki* is a very crude implement, and, as a consequence, the present methods of husking rice in the rural areas are very inefficient. The operations are quite amenable to machine production, and considerable economies are obtained when husking is carried on in factories by means of power-driven machinery. A large number of rice mills has already been started in various parts of the province. In 1921, there were altogether 137 rice mills in the province, most of them being comparatively small concerns owned by private individuals. With the increase in the number of these mills, the rice-husking business is gradually passing from the hands of the women. Such a transformation in the industry no doubt ensures economies in production, but the fact remains that when, as a consequence of this change, a woman is thrown out of employment and is deprived of her means of livelihood, she is very often unable to find any other suitable work by which she can maintain herself. The difficulty in finding new employment is increased by the prevalence of the *purdah* system which

Increasing competition of mills.

prevents her from seeking work anywhere outside home.

Rural Bengal also carries on the manufacture of vegetable oil from mustard, *til* (sesamum), linseed, etc. Of these, mustard oil, which is used by all classes of people for cooking, is by far the most important. According to the Census Report of 1921, there are 148,001 persons dependent on the manufacture and refining of vegetable oils in Bengal. A small proportion of these persons is supported by the industry carried on by large mills in cities and towns, and practically all the rest depend on the production of oil in the rural areas by means of the country *ghani*. This is a crude wooden machine, worked by a pair of bullocks, which is somewhat similar to the cane-crushing machine used in the manufacture of *gur* in rural Bengal. The same *ghani* can be used for pressing different kinds of oil-seeds—mustard, *til*, or linseed. The extraction of the oil by means of the *ghani* is not very satisfactory, for a proportion of the extractable oil is always retained by the cakes. For this reason, the modern oil mills of the province sometimes buy *ghani* cakes from the market and extract the oil contained in them for commercial purposes.[1] The Kalu (producer of oil) sells the oil and the cake in the nearest *bazar* or *hat*: sometimes he sells directly to the consumer, but more often there is a middleman—the grocer—standing between the two. The oil, as already indicated, is demanded by all classes of people for domestic uses ; while the cake is generally purchased by the cultivators to be used as fodder, and, to a small extent, as manure. Like the husking of

Oil-pressing industry.

[1] Survey of Cottage Industries in Bengal by D. B. Meek, p. 16.

rice, the manufacture of vegetable oil also is highly amenable to machine production, and, as a consequence, the industry is increasingly coming under capitalistic organisation and control.

Fishing industry.

There is one particular industry—if we may call it an industry—which possesses in a sense a greater importance than any of the others we have examined above. This is the fishing industry of rural Bengal. The number of persons dependent on it was 448,373 in 1921.[1] Fish, as it has been stated before, is an important daily food of the Bengalis. As they do not eat meat, except as a sort of an occasional luxury, it constitutes an essential element in their diet. Thus, the importance of the fishing industry arises not only from the fact that it is the means of livelihood of a large number of people, but also for the reason that it is closely connected with the maintenance of the physical efficiency of the bulk of the population.

Sources of supply.

The principal source of the supply of fish is the great river system of the province. These rivers are the natural abode of numerous varieties of fish. There are about 350 different species of fresh water fish in India; and it is believed that at least 250 of them are found in the rivers of Bengal.[2] A considerable supply of fish is also obtained from the *bils* which exist in different parts of the province. Besides the rivers and *bils* which may be regarded as the natural sources of supply, fish is also reared in the numerous small tanks scattered all over the province. These tanks are primarily intended for

1 Bengal Census Report, 1921, p. 423.

2 Report on the isheries of E. B. and Assam by K. C. De, p. 11.

the supply of drinking water, but they are also utilised for the purpose of breeding fish.

The fisheries of the province are an important source of income to their owners. Some of them are directly owned by the State and are leased out to middlemen, called *ejaradars ;* but the majority are in the permanently settled estates and are held as tenures either directly under the zamindar, or under some intermediate tenure-holder. There are sometimes several grades of middlemen standing between the zamindar who owns the fishery and the fishermen who actually catch the fish. The tenure-holder, who occupies the lowest position in this chain, leases the fishery generally for a term of one year to the highest bidder by a form of auction. These annual leases are very often taken by another class of middlemen—fish-dealers who are usually richer and thus offer better security for the rent than the actual fishermen. It thus happens that in most cases these lessees do not catch fish themselves, but either sublet the fishery to others in small sections, or grant licenses for fishing to the actual catchers on payment of a fee. This fee is levied on various principles. Sometimes it is a flat rate on each family ; more often, it is based on the number of boats, or on the number of actual workers, or on the number and kind of nets used. The last system is the one most prevalent in Eastern Bengal which contains the largest and the richest fisheries in the province.

System of tenure.

Fishing as an occupation is generally followed by a number of Hindu castes ; only a small proportion of the fishermen belongs to the Mahomedan community. Although the Mahomedans do not recognise any caste system, those amongst them who

follow fishing or fish-dealing as a means of livelihood, are usually considered to occupy a rather low position in society and to form a distinct class by themselves. There are mainly two kinds of implements that are used in the river fisheries of Bengal—boats and nets. Of these, the latter are of different varieties and sizes. The largest nets employed in the Padma, the Meghna and the Jamuna—the three great rivers of the province—are called *ber jals* which sometimes have a length of 1000 feet and a breadth of 20 or 25 feet. They are placed across the river and are suspended by means of a series of bamboo floats at a depth of 10 or 12 feet from the surface of water. Fishermen generally prepare their own nets with strong sunn-hemp thread. The boats are, on the other hand, hired from middlemen either on a fixed cash rent, or on a certain proportion of the catches.

Appliances.

Marketing.

Fishermen who actually catch fish sell it to a class of middlemen, called *nikaris* in East Bengal. These middlemen are also members of the fishing castes ; but they are more well-to-do and are, therefore, in a better position to carry on their business as dealers in fish. The buying and selling of fish between these two classes take place on the rivers near the area where fishing is done. As the commodity is a highly perishable one, particularly in a tropical country like this, it becomes almost useless, unless it is consumed within a short time after it is caught. For this reason the *nikaris* or middlemen maintain fast-going boats for transporting the fish from the place where it is caught to the market where it is to be sold. A good deal of fish is also exported to Calcutta and other cities from those fisheries which have facility for quick transport by

railways and steamers. Fish which is thus exported to distant markets has to be preserved by means of ice. This is specially necessary in the hot weather, because during this season, owing to the high temperature prevailing in the province, decomposition sets in within a few hours, unless the fish is preserved by ice. In this period, those who export fish to Calcutta and other places have to bring their supplies for the purpose of booking to such stations as Narayanganj, Chandpur and Goalundo, where ice is available for preserving the fish during the journey.

Curing of fish.

In some parts of the province where there is no facility for quick transport, and where the supply is much in excess of the local demand, fish is cured and preserved so that it may later on be exported to distant markets. There are mainly two processes of curing fish in the province—by drying it in the sun and by keeping it in salt. Of these, the former is far more common than the latter. Dried fish is locally called *sutki* and is often liked by the lower classes of people. Curing of fish by this method is carried on extensively in the districts of Chittagong, Tippera and Mymensingh. The smaller fishes when dried are simply kept in the sun for a number of days, but in the case of the larger, the heads are severed off and the entrails brought out before they are dried. If the weather is fine, a week is sufficient for drying, but if rain intervenes, the process has to be continued for a few days more and the quality of the product also becomes inferior. When drying is over, the fish is kept buried underground in trenches which are lined with mats. By this process the *sutki* acquires its brownish red colour and also its peculiar smell. *Sutki.*

Salted fish.

The method of preserving fish in salt is employed in the case of the *Ilsa* (Hilsa) only. It is practised in Faridpur, Backerganj, Dacca, Tippera and some other districts where the supply of this particular kind of fish is large during the flood season. The fish is divided into thin slices and is then treated with salt which is well rubbed on both sides of these slices. It is then put into earthen jars and their mouths are then closed in such a manner that no air can pass into them. In this state the fish keeps for two or three months. *Ilsa* fish is often preserved in this way by people not for any commercial purpose, but for their own consumption at a time when it is not available.

Diminution in the supply of fish.

The average consumption of fish per head in this province has in recent times perceptibly diminished. This is due, on the one hand, to an increase in population, and on the other, to a reduction in supply. The decrease in supply has taken place not only in the case of the river fisheries, but also in that of the *bils* and tanks. Most of the *bils* in the province are, as we have seen, being gradually filled up by the silt-depositing action of the rivers, while the great majority of the tanks are becoming unsuitable for the breeding of fish, owing to the neglect of their owners in keeping them in proper condition. In the area subject to the annual flood, a new enemy of the fish reared in tanks has recently made its appearance in the form of water-hyacinth. The growth of this pest in tanks does not only pollute the drinking water, but is also highly inimical to the culture of fish in them. There are very few tanks in this area which have not been attacked by this rapidly-growing aquatic plant, and as a consequence, the production of fish in tanks in this part of the province has considerably diminished.

One reason for the diminution in the supply of fish is the destruction of immature animals in large numbers. Fishermen do not exercise any scruple in this matter ; and practically every fish captured by them is destroyed without any consideration for the future supply. The killing of fish in such immature condition has a two-fold effect on the future supply ; for the young fishes, if allowed to live, would increase it not only by themselves growing in size, but also by reproduction. This indiscriminate slaughter of fish is partly due to the want of foresight on the part of the fishermen, but is largely the result of the particular condition of the fishing industry and also of the system of short-term leases generally extending for a year. As there is no certainty that the lease will be renewed to him at the expiration of the term, the fisherman tries to make the most of his position as the lessee. His action in this matter is also affected by the consideration that if he spares the young fishes with a view to maintaining the future supply, others may not follow the same policy, and the only result of his action in that case will be a sacrifice of his own profits.

Condition of fishermen.

There has been in recent years an enormous rise in the price of fish. Though statistics of the price of fish are not available, it can be safely asserted that in the course of the last 20 years it has, at least, risen by 150 per cent. This rise in the price of fish has been mainly brought about by a diminution in supply as well as by an increase in demand caused by the growth of population. It is also, to a considerable extent, due to the general rise in the price level, which has taken place during and after the last great war. The economic condition of the

fishermen, in spite of this rise in the price of fish, does not seem to be satisfactory. The income of a fisherman who actually catches fish will not exceed Rs. 16 or 17 a month. It is for this reason that a considerable proportion of the members of the fishing castes is adopting other occupations as its means of livelihood. Although the price of fish has very much increased, the average catch per worker has seriously declined, so that the income of the fishermen is not what is indicated by the rise in price. Moreover, any increase there may have been in the money income of these people, has been more than offset by the rise in the cost of living. The organisation of the industry also is to a considerable extent responsible for the adverse economic condition of the fishermen. Like the workers in other rural industries, they are also exploited by middlemen, called *nikaris*. A *nikari* advances money to a fisherman on the condition that all the catches will be sold to him and to no other competing buyer. The inevitable result of this is that the fisherman does not receive a fair and competitive price for his product.

Exploitation by *nikaris*.

The *nikaris* who are the *mahajans* of this important rural industry thus enrich themselves at the cost of the fishermen. There is a common Bengali proverb to the effect that the fisherman is clad in rags, while the *nikari* wears gold in his ear.[1] This proverb merely embodies the fact of the exploitation of the fishermen by the *nikaris*. A few years ago an enquiry was made by the Government into some of the river fisheries of Bengal, and it was found that in a particular fishery, out of Rs. 80,000,

[1] The proverb is— "জেলের পরণে তেনা, নিকারির কানে সোনা।"

the value of the catches, Rs. 1,000 went to the landlords, Rs. 20,000 to the fishermen, and all the rest to the middlemen.[1] This should not be regarded as an exceptional case ; there are many fisheries in Bengal where the conditions are equally bad. This exploitation of the fishermen by the *nikaris* may be prevented by the formation of co-operative societies amongst the former for credit as well as marketing. The number of fishermen's co-operative societies in Bengal in 1926-27 was 108, with a membership of 3088 and a working capital of Rs. 119,920.[2] It will be seen that, as in the case of other rural industries, the progress of the co-operative movement in this industry also has been as yet very inadequate.

Summary and conclusion.

We have considered in the preceding pages the more important rural industries of the province. There are others such as the curing and tanning of hides, manufacture of mother-of-pearl buttons, gold and silver ornaments, bamboo mats and baskets, which are of comparatively small importance. The conditions in these industries are fundamentally the same as in those we have studied above. Speaking generally, the rural industries in Bengal are in a declining condition. This decline is due to a number of causes. In the first place, there is the competition of factory industries both in India and in foreign countries. Then, the methods of production in most of these rural industries are extremely backward. Lastly, their organisation in respect of finance, supply of raw materials, and marketing of finished products is highly defective. So far

1 Report on the Working of Co-operative Societies in Bengal, 1925-26, p. 18.

2 Report on the Working of Co-operative Societies in Bengal, 1926-27, p. 17.

as the internal defects of the industries are concerned, they are certainly capable of being mostly removed. The methods of production which are generally inefficient can be improved ; the deficiencies in organisation also can mostly be removed by the introduction of co-operation. But as regards the competition of factory industries, it must be admitted that it is difficult to eliminate it, particularly in the case of those which are within India. The question therefore arises as to whether the rural industries of the province will be able to successfully stand this competition, assuming that the necessary improvements in methods of production and organisation are effected. In answer to such a question, it may be said that, although large scale production has in general many advantages over the small, there are some kinds of industries where these advantages are not very important, and where the small producer is still holding his own. Thus, in Japan and other countries, there are many important cottage industries which are really in a flourising condition. In this province, those rural industries in which the economies of large scale production are very pronounced have become practically extinct. The industries which are still surviving are those in which these economies are not very important, and as a consequence, the competition of the large scale producer is not very serious. If, in spite of their present defects, they are maintaining their existence, it is reasonable to think that, when these defects are removed, they will be in a much stronger position to compete with the products of factories.

CHAPTER VIII

TRADE AND TRANSPORT

Trade is the outcome of division of labour.

Trade owes its existence to division of labour in society. When the members of a society specialise themselves in the production of particular commodities, they become interdependent and have to satisfy their wants by procuring goods by exchange. Division of labour may be confined to the inhabitants of the same place, or it may extend over different places. In the latter case, which is called geographical division of labour, exchange of products between these different places becomes necessary, and the question of transport assumes great importance ; for without suitable means of transport, this exchange is not possible.

There was a time when a village in this country was economically self-sufficient.

There was a time when a village in this country was almost a self-contained unit with regard to its economic needs and necessities. As there was little reliance on external sources of supply, trade was comparatively insignificant, and was practically confined to the exchange of products among the inhabitants of the same village. The producer living very near the consumer was often able to sell his product directly to the latter without the intervention of the middleman. With the development of the means of transport and communication, external competition made its appearance, the markets for most commodities were widened, and the village ceased to be economically self-sufficient. This process was considerably accelerated by the lowering of the cost of manufactured articles as a result of the new

system of production after the advent of the industrial revolution. The increased dependence of the village people on external sources was also in some measure due to the appearance of new articles which have multiplied their wants. For example, fifty years before, the rural people were not familiar with things like matches or kerosene oil ; but when these commodities appeared in the market, they began to use them, and now they are so much accustomed to their use that they can hardly do without them. As the village requires to buy commodities from outside, it also produces in its turn things which are intended to satisfy the wants of people living in other places. The jute produced by the Bengal cultivator is now consumed practically all over the world.

The volume of trade is still small.

In spite of this increased commercial intercourse between the village and the outside world, the volume of rural trade in this province is comparatively small. This is indicated by the number of persons who are dependent on trade. According to the Bengal Census Report, 1921, only 6·7 per cent of the population of the province are supported by it. The proportion for the rural areas proper will be even less, for trade is carried on to a much greater extent in the towns than in the villages. Compared with European countries, the proportion of the population supported by trade in this province is extraordinarily small.[1] This is largely due to the fact that the great majority of the rural people in this province have yet a comparatively small number of wants, and that they themselves produce the main articles of their consumption. That their wants are few and simple, is again due partly to their ignorance, and partly to their general poverty. The average rural inhabitant

1 Bengal Census Report, 1921, p. 392.

in this province has no knowledge of the numberless varieties of things which modern industries are ceaselessly producing for the satisfaction of the consumer. Even when he possesses this knowledge, he has no effective demand for most of these things, for his income is too small to permit him the enjoyment of these luxuries and comforts of the modern world.

Two parts of rural trade.

Rural trade in Bengal consists, firstly, of the exchange of things which are produced in the rural areas and consumed locally. Its volume is not very large and the part which the trader proper plays in it is almost insignificant. As the producer and the consumer live in the same neighbourhood, there is not much need for any connecting link in the form of the middleman. Thus, in a village market, things like milk, fruits, and vegetables, are sold by the producers directly to the consumers. In the next place, there are those transactions which relate to commodities imported from, or exported to, other places. This part of the rural trade is more important and is carried on by the middleman proper. It also depends very much on the means of transport. Of the various things that are imported into a rural market, some have their origin in foreign countries, some in other provinces, while the rest are produced in other parts of this province. Correspondingly, of the exports, some have their final destination in foreign countries, some in other provinces, and the rest in other parts of this province.

Organisation of rural trade.

Buying and selling in the rural areas generally take place in *hats* and *bazars*. These are markets where the rural people assemble together for these purposes either daily or on some days in the week. Ordinarily, a *bazar* is held daily, while in a *hat* business is carried on only once or twice in a week.

Hats and *bazars.*

In respect of the amount and variety of trade, a *hat* is much more important than a *bazar*. Sometimes the same market place where the *bazar* is held also accommodates the *hat*. In such a case, on one or two days in the week, the *bazar* transforms itself into the *hat* with a considerably greater amount and variety of goods brought for sale and a much larger attendance of buyers and sellers.

Paucity of shops.

One of the striking characteristics of these rural markets in this province is the paucity of shops of a permanent nature. In the average village *bazar*, there are ordinarily 3 or 4 shops dealing in groceries, spices, earthenware, etc. The condition in this respect in the *hat* is much the same. Most of the dealers come on the market days with their goods, carry on their transactions in open space or under some sort of temporary sheds, and after the day's business is over, return home towards the evening or at night. There are several causes which favour the predominance of this kind of temporary dealers in the rural markets. A considerable proportion of the things which are bought and sold in these markets consists of local products. As it has been stated before, their marketing is done not by middlemen, but by their producers. Since the main business of these people is the production of the commodities and not their marketing, and since the quantity produced and sold by an individual is ordinarily small, they cannot be expected to maintain marketing establishments of a permanent character in the *bazar* or in the *hat*. On the other hand, the pure middleman finds that the amount of business that can be done in a village *bazar* is generally very small ; while if he confines himself to any particular *hat*, there is this disadvantage that he can carry

on his transactions only on one or two days in the week, on which the *hat* is held. On the remaining days, the *hat* puts on a deserted appearance, and the trader who maintains a shop in it has practically to sit idle.

These dealers have, as a rule, the practice of visiting two or three *hats* in turn on different days in the week. The days on which *hats* in the same region are held are for this reason so fixed that they do not usually coincide. The number of *hats* is so large and they are distributed so evenly over the province that, in any part of it, within a radius of 3 or 4 miles, there is a *hat* almost every day in the week. Excluding the Chittagong Hill Tracts and the district of Darjeeling, there are 6787 *hats* in the plains districts in British territory in this province, which have a total area of 70,537 sq. miles.[1] This means that in this area there is a *hat* for every 10·4 sq. miles. The average distance between one *hat* and the next is thus about 4 miles.[2] In the Eastern Bengal districts where the density of population is greater and the number of *hats* comparatively larger, this average distance between two successive *hats* is only a little over 3 miles.[3] Thus a person in these districts can attend 4 different *hats* in a week without going more than 4 miles from home.

Dealers generally attend a number of *hats*.

It will be clear from above that the organisation of the rural markets, of *hats* in particular, is not suitable for trade in some commodities required by the rural people. Where a large variety of stocks has to be kept, or where the commodity is heavy or

The *hat* is not suitable for trade in some commodities.

Bengal Census Report, 1921, p. 393.
2 *Ibid.*
3 *Ibid.*

bulky, marketing cannot be done by this sort of inconstant dealers running from one *hat* to another on successive days in the week. On the other hand, large standing shops are not profitable, so far as *hats* are concerned, because of the fact that business takes place only on one or two days in a week. In the *bazar*, buying and selling are no doubt carried on from day to day, but these are mostly with regard to food-stuffs and other articles of daily consumption. The demand for other things by the inhabitants of the village is generally too small to justify the existence of shops of any considerable size. For this reason, commodities of the description given above, *e.g.*, corrugated iron, timber, hardware, better kinds of cotton goods, are usually sold in the towns, or in important trading centres in rural areas, which are, however, few and far between. When a villager wants to buy them, he has to go a long way from his house to one of these places and incurs a good deal of expense in carrying home his purchase.

Fairs or *melas*.

Besides these markets of a regular and permanent character, there are annually held in various parts of rural Bengal temporary *melas* or fairs, in which a good deal of buying and selling takes place. These fairs come into existence generally at the time of some religious festival, and continue for a period varying from one day to two or three months. Broadly speaking, they may be divided into two classes—the short-term and the long-term *melas*, according as the period for which they are held is less or greater than a fortnight. The short-term *melas* are very numerous, and on some occasions, they are held in almost every village where the Hindu population predominates. One such occasion is the *Rathajatra* or the Car Festival of Jagannath, which comes off in the latter part of June. In these fairs,

toys, sweets, earthenware, cutlery, cheap fancy goods and various other things are brought for sale, and almost every family in the neighbourhood will make some purchases. The *mela* is as much a place of amusement as of business, and the rural people visit it not only for the purpose of buying and selling, but also for that of amusement. Although these fairs are held on the occasion of Hindu festivals, the Mahomedans participate in them almost equally with the Hindus.

The long-term fairs are much fewer in number ; but the volume of business carried on in them is considerably larger. A characteristic feature of this kind of fairs is the importance of wholesale trade—a thing which is almost totally absent in the other. They serve as occasional centres of the distributing trade in the rural areas in the province ; and merchants from various places come to them for making purchases or sales. The temporary character of these fairs does not enable lasting arrangements to be made for shops and warehouses, and business is generally conducted in corrugated iron sheds with walls of bamboo mats. These are erected every year at the time of the *mela* and are demolished as soon as it is over. These long-term fairs, in which a large amount of business—both in heavy and bulky goods—is carried on, are usually held in places possessing facility for transport. With the opening up of new centres of distributing trade of a permanent character in various parts of the province, their number has been gradually decreasing. One of the most important of these fairs which have ceased to be in existence in recent times is the *Kartik Baruni Mela,* held annually for about three months during the cold weather at a place, called Kamalaghat, about 15 miles to the south-east of Dacca. In its flourish-

ing days, there used to be conducted in it a total business of nearly 50 lakhs of rupees. Traders from various parts of Bengal and even from the southern districts of Assam used to come here for buying and selling things. The decline of this great fair and its final extinction were, apart from the cause stated above, due to the difficulties in transport brought about by the formation of a large alluvial island in the Dhaleswari river on the bank of which it used to be held.

Selling of goods by hawkers.

There is still another form of rural trade that is in existence in Bengal. This is the retail selling of goods by hawkers. Some of these tradesmen have a definite area to which they confine their activities, while others move from place to place and carry on their business over an extensive area. There is one particular branch of trade which is almost entirely in the hands of the former class. This is the retail selling of brass and bell-metal articles in the rural areas. In the village markets proper—whether in the *hats* or in the *bazars*—there is hardly any shop dealing in these articles. Nor are these things usually brought for sale by those dealers in *hats* who make their appearance on *hat* days only. The principal reason why these things are not usually sold by dealers in rural markets but by hawkers is that the latter by carrying their wares to the very door of the purchasers make it possible for the women to choose the articles which they require for household purposes. The average Bengali housewife of the middle and upper classes has a great hobby for purchasing these things, and she will buy a good many of them often without the knowledge of the head of the family.

The travelling hawkers are generally members

of the Vediya caste. These semi-aboriginal people have no fixed abode, but live in boats in which they travel from place to place. As the boats are worked by these gypsies themselves—even by the women—there is thus no special expense in going from one place to another in course of their trade. Ordinarily, several families, each in its own boat, travel together. This is done not only for the sake of society, but also as a sort of protection against thieves and robbers at night. When they visit a new place, they stop there for a number of days, the men usually remain in charge of the boats on the river, while the women go into the neighbouring villages every morning for the purpose of trade and return to the boats before sunset. They generally deal in glass bangles and various kinds of cheap imported articles. In selling these things, the women are more skilful than the men. There is also the advantage that when the hawker is the wife of the Vediya, she can directly approach the womenfolk who form the bulk of the customers. It should be noted that this form of trade by people living in boats is more prevalent in those parts of the province which abound in rivers. On the whole, the total amount of trade carried on in this way is not very large and seems to have been decreasing in recent times.

Itinerant hawkers.

The organisation of rural trade, we have studied above, relates primarily to its distributive side. There is another aspect of it which we have not as yet considered. This is the marketing of rural products by their producers and their collection by middlemen for the purpose of export to other places. As agriculture is the occupation of the great majority of the rural people, these exports from the rural areas in the province mainly consist of the produce

Collecting trade in rural Bengal.

of the soil. Of these, the most important are rice and jute. We shall first consider the collecting trade in rice. It should, however, be noted that although rice is grown in nearly 87 per cent. of the total cultivated area in the province, by far the largest part of it is consumed locally, and that by the producers themselves. The collecting trade with regard to this agricultural product attains importance only in those parts of the province, as in Backerganj and Dinajpur, where the amount produced is largely in excess of what is required to satisfy the local demand. It has not much importance in a district like Dacca which has practically no such exportable surplus.

Rice.

The cultivator who produces rice is not usually required to go to any *bazar* or *hat* for marketing it. As soon as the harvest is over and the rice is ready for sale, middlemen, called *beparis*, come to his house for buying it. In Bengal, the cultivator is not tied in any way to the money-lender for selling the rice. The money-lender, as a rule, gives his loans in terms of money and is content to receive it back together with the interest in the same form. Sometimes, an advance of money is made by middlemen to cultivators on condition that the product will be sold to them ; but the extent to which this is done is very small, and may, for all practical purposes, be neglected. The cultivator generally sells his rice to a *bepari* when he comes to him for this purpose. In some cases, he also takes it to a *hat* and sells it there. The *bepari*, who purchases rice from the houses of individual cultivators and also sometimes from *hats*, brings it to the next higher centre of export trade, where it is purchased by merchants who forward it to Calcutta, Dacca and other places. The merchant, who brings the rice to Calcutta or

Different grades of middlemen.

to some other distributing centre, generally has recourse of an *aratdar* (owner of a warehouse) for storing it until it is sold, it being understood that the sale should be effected through the *arathdar* and not by any other agency. The *arathdar* makes a charge for the services rendered by him at a fixed rate per hundred maunds or at a certain percentage of the total price received. If the rice is not required to be stored in an *arath*, it can be sold through a local *dalal* (broker) ; and in such a case, the charge becomes less than when it is sold through an *arathdar*.

Jute.

The collecting trade in jute is more important than that in rice. While the latter is mostly consumed in the locality where it is produced. the former is almost entirely exported to Calcutta and foreign countries for the purpose of manufacture. The number and variety of middlemen in the jute trade are greater than those in the trade in rice. This seems to be in some measure due to the higher value of the crop and the consequent need for a larger number of middlemen to finance its movement. The special process of baling is also responsible for the creation of the class of balers in the marketing of jute.[1] Another circumstance favouring the existence of a large number of middlemen is the difficulty of collecting jute from individual producers. The average jute-grower in the province produces only a small quantity of jute, and this he sells by instalments. One reason for his doing this is that his crop does not mature all at the same time. Even when it does, he is not willing to sell it all

Number and variety of middlemen greater.

[1] See evidence of Rai J. M. Mitra Bahadur, Registrar of Co-operative Societies, Bengal, before the Royal Commission on Agriculture in India.

at once, owing to the uncertain character of the market. His pressing needs compel him to sell a part of it at the beginning of the season ; but when these have been satisfied, he prefers to wait in order to take advantage of any future rise in price. This policy of waiting, and watching the market, generally leads to his selling the jute by a number of small instalments.

Organisation of the jute trade.

As in the case of rice, the cultivator mostly sells his jute at his own house. By the middle of July small dealers, called *farias,* begin to frequent his house for purchasing it ; and they continue to do so, until his stock is completely exhausted. The jute trade in rural areas lasts usually from July to November. Throughout the greater part of this period the jute districts are flooded and, consequently, the means of transport that is most commonly used by the dealers for this purpose is the small country boat. With the subsidence of the flood, as transport difficulties present themselves, the season also in most places comes to an end. When the *faria* by his house-to-house purchase collects from 25 to 30 maunds of jute, he takes it to some *hat* to sell it there to a *bepari.* Often the *faria* is financed by a *bepari* and receives advance from the latter. The *bepari* in his turn is sometimes financed by a middleman of a higher grade, *e.g.*, the baler or his agent. When a middleman of one grade is thus financed by another of a higher grade, he has to sell the jute to the latter at somewhat less than the market rate. Some of the baling firms in the large jute centres have the practice of advancing considerable sums to *beparis* at the beginning of the jute season for ensuring supplies of jute.

The largest centre of the collecting trade in jute

is Narayanganj in the district of Dacca ; but there are also other places, such as Chandpur, Madaripur, Serajganj, which are of considerable importance in this respect. Each of these centres contains a large number of baling firms which have a ramification of small and temporary branches or out-agencies all over the jute-growing area. Jute is purchased by these firms at their central offices and also at these out-agencies in the rural areas. The central-office purchase is made directly from *beparis,* but sometimes, there is a middleman between the two, called a commission agent. This dealer does not necessarily work on commission, though it is implied by the term. Very often he purchases jute on his own account, the baler undertaking to finance him and to transport the jute when it is purchased. In such a case, the baler accepts the jute on assortment when it is brought to his central office, a deduction being made for the transport charges. When the commission agent really works on commission, he receives ordinarily about 4 annas per maund of jute purchased by him on behalf of the baler. It will be noted that in this case he is free from the risk of the business, and acts merely as an agent of the baler. This system, however, frequently gives rise to difficulties regarding the assortment of jute, for it is found that the commission agent invariably quotes a higher grade than is really justified by the quality of the jute supplied by him. It is chiefly for this reason that the majority of the balers have discarded this system in favour of the other in which the price of the jute supplied by the commission agent is determined on assortment. A *bepari* sells his jute directly to a baler at one of the large centres of the trade, when he happens to live in the neigh-

bourhood. Most of the dealers of this class have to purchase their jute in remote villages, and it is not convenient for them to do so. They sell their jute to the out-agencies or branches which, as it has been stated before, are opened during the jute season all over the jute-growing area. These out-agencies are started in the warehouses of *arathdars* who undertake to procure sufficient imports. The *arathdar* receives a commission—usually 9 pies per maund—on the total amount of purchase. Ordinarily, there are branches of several firms at the same station. This, on the one hand, ensures a large supply of jute, and on the other, enables the *beparis* to realise a good price from the competing buyers. The jute that is bought by these out-agencies is then carried to the central office of the firm, where, along with the purchases made locally, it is pressed into bales and exported to Calcutta.

A good deal of underhand practice in it.

There is a good deal of underhand practice in the jute trade. The dealer often sprinkles water into the loose jute before he brings it for sale. Sometimes it is exposed to the dew at night so that it may gain in weight. These practices are followed by the *faria* and the *bepari*, and not by the cultivator who grows jute. The wide prevalence of these practices is responsible for the custom of making a dryage allowance, called *dhalak*, in calculating the weight of the jute at the time of buying. Various other allowances are also made by the baler's agent in purchasing jute from *beparis*. These are *kabari* (staff allowance), *namuna* (sample allowance), *mutti* (tiffin allowance for the staff) and *britti* (allowance for some religious purpose). All these charges including the *dhalak* come up to about 4 seers in a maund or 10 per cent. of the net weight for which price is

paid. The baler's agent also makes some profits by the manipulation of scale. His *kayal* or weighman is always a great expert in this.

Tobacco.

Tobacco is another agricultural product in which there is a considerable export trade from the rural areas in some parts of Northern Bengal. The collecting trade in it is fundamentally similar to that in rice. The cultivator sells his product generally to *farias* who frequent his house in the tobacco season. Sometimes he takes the tobacco to a neighbouring *hat* to sell it there. The *faria,* after buying the tobacco from individual cultivators, stores it in his house, until it is sold to merchants coming from such places as Chittagong, Rangoon, Akyab, Manikganj, and Hajiganj. These merchants put up in the houses of *dalals* (brokers) with whom they go into the interior for buying tobacco from the *farias* and also sometimes from growers. The *dalal* receives a brokerage varying from Rs. 10 to Rs. 15 per hundred maunds purchased through him. There is also a large number of Marwari firms in the tobacco-growing area, which collect tobacco and export it on their own account to Calcutta and other places.

Elimination of some of these middlemen by co-operation

The existence of so many grades of middlemen in the marketing of agricultural products naturally suggests the question as to whether they can be eliminated by the introduction of co-operative methods. A substantial portion of the price paid by the consumer is intercepted by these middlemen, and if by co-operative organisation they can be done away with, it will be an undoubted gain from the standpoint of the poor cultivators. This is particularly important in the case of the jute trade in which an enormous sum of money goes every year into the pockets of these middlemen. The volume of the trade in jute is very large, while the difference

between its price in the Calcutta market and that ruling in the villages is considerable. Co-operative marketing of agricultural products has as yet made very little progress. The number of agricultural purchase and sale societies in this province in the year 1926-27 was only 78, with a total membership of 20,553, and a total working capital of Rs. 891,844.[1] The explanation of this extremely small progress in the marketing side of agricultural co-operation is that, until very recently, proper attention has not been paid to its development. A beginning has recently been made in the co-operative marketing of jute, and a number of societies has been started at Chandpur, Narayanganj, Serajganj and other places. They are under expert European or Armenian managers and have their own warehouses and presses. The jute purchased by these societies is pressed into bales and exported to Calcutta where it is sold to the mills or the exporting firms through the Bengal Co-operative Wholesale Society. These young jute-sale societies have not as yet achieved any definite commercial success. But it should be remembered that they have to work against the competition of powerful and well-established firms organised on capitalistic lines, possessing long experience and large resources. It is, however, noteworthy that within this short time they have succeeded in establishing their marks in the market.[2]

Co-operative sale of jute.

Transport in rural Bengal.

Let us now consider the question of transport. Nature has provided Bengal with an excellent system of water-ways.The three great rivers of the province —the Ganges, the Brahmaputra and the Meghna—

1 Annual Report on the Working of Co-operative Societies in Bengal, 1926-27, p. 11.

2 *Ibid.*, p. 12.

and many of their larger tributaries and branches are navigable throughout the year by all kinds of country boats and even by river steamers. Over these broader water-ways, there are regular steamer services which connect places of importance lying on their banks. Goalundo, at the confluence of the Ganges and the Brahmaputra which is called in this part of its course the Jamuna, is the centre of a number of regular services emerging in different directions to Narayanganj, Chandpur, Bahadurabad, and Digha (near Patna). There are direct steamer services through the Sunderbans connecting Calcutta with Dibrugarh in North-Eastern Assam, and Silchar in Cachar. Steamers also ply regularly between Khulna and Dacca *via* Barisal, and between Narayanganj and Markali (in Sylhet) *via* Bhairab Bazar. Besides these, there are numerous other services of smaller importance in different parts of the province.

Excellent system of water-ways.

Steamer services.

Transport and communication by steamers, though quite well developed, are far from sufficient to meet the requirements of the entire province. There are extensive tracts of country, as in Northern and Western Bengal, where the number of rivers is comparatively small, and those which exist are not navigable by steamers except during the flood season. These parts of the province have thus to depend largely on railways for the carrying of passengers and goods over long distances. Excepting the two districts of Khulna and Backerganj, which are thoroughly interspersed with rivers, streams and smaller watercourses, railways also are essential in most of the deltaic districts of Southern and Eastern Bengal for the wide tracts of land that often lie between two navigable rivers.

Facility for water transport does not exist equally in all parts of the province.

The total length of railways open for traffic in

Railways.

this province was 3288 miles on 31st March, 1927.[1] As the area of the province is 82 thousand sq. miles, this means that there is a mile of railway for every 25 sq. miles. The facility for water transport in Bengal reduces her need for railways. But even making allowance for this fact, it can hardly be denied that the development of railways in the province has not as yet been adequate. There are many parts where there is neither any facility for water transport, nor any system of railway.

Four principal railways in the province.

There are broadly four railways which serve the province at the present time—the Eastern Bengal Railway, the East Indian Railway, the Bengal Nagpur Railway and the Assam Bengal Railway. Of these, the first belongs almost entirely to the province, and out of the total length of 3288 miles of railway, more than half is contributed by it. The main line of the E. B. Railway runs from Sealdah in Calcutta to Siliguri at the foot of the Himalayas, crossing the Ganges over the famous Hardinge Bridge at Paksey. A very important branch runs from Poradah to the steamer terminus at Goalundo, thus connecting Calcutta with the eastern districts of the province. Another branch, which has been opened recently, joins the jute centre of Serajganj with the main line at Iswardi. An isolated section starting from Narayanganj traverses the Dacca and the Mymensingh districts and continues up to Jamalpur, where it divides itself into two branches proceeding to Bahadurabad and Jagannathganj, both on the Jamuna. The Bahadurabad section is connected by a ferry service with another line which, passing through the districts of Rangpur and Dinajpur,

[1] Report on the Administration of Bengal, 1926-27, p. 206. The total mileage in the whole of India will be about 40 thousand.

proceeds up to Katihar where it joins the Bengal North Western Railway.

The remaining three are inter-provincial railways which lie only partly in Bengal. The East Indian Railway and the Bengal Nagpur Railway have both their terminuses at Howrah, near Calcutta. The former is the main carrier between Bengal and Northern India and taps the coal fields in the neighbourhood of Raniganj ; while the latter forms the connecting links between Bengal on the one hand, and Madras and Bombay on the other. The main line of the B. N. Railway proceeds to Kharagpur in the district of Midnapore, where it bifurcates into two branches, one running to Madras and the other to Bombay. The Assam Bengal Railway, as the name implies, connects Bengal with the adjoining province of Assam. The main line starts from the sea-port of Chittagong and, passing through Noakhali and Tippera, enters Assam in the district of Sylhet. From Laksham in Tippera, a branch proceeds to the steamer terminus at Chandpur, and another to Noakhali. Two other small sections connect Bhairab Bazar with Dacca and Mymensingh respectively.

Other means of transport.

The railways and the steamer services are primarily intended for linking together the more important industrial and commercial centres in the province. Though they pass through the rural areas and connect the villages that lie along their route, the great majority of these are beyond their reach and are dependent on supplementary means of transport which are mostly of a primitive character. The most important of these rural carrying agencies in the province is the country boat. It is of various sizes and shapes and is used for carrying both passengers and goods. Those which are meant for goods are generally heavy and move very slowly.

Country boats.

The largest of these have a carrying capacity of more than 1000 maunds, but such large boats form only a very small proportion of the total number. At the other extreme, there are the tiny *dingis* which can carry just a few maunds of goods. In the case of these small boats, there is not much difference in shape between those which are intended for passengers and those intended for goods. With the exception of the smallest *dingis,* all boats have a mast for supporting the sail which is utilised whenever it is possible to do so. When the sail cannot be used, the boatmen depend on their oars, and on the current, if it is favourable. When both the wind and the tide are strongly against them, they generally adopt the device of towing the boat by means of a rope attached to the top of the mast.

Boats are used to a varying extent in most parts of the province. In spite of their slow movement, they are a convenient and economical means of transport, particularly when railways and steamers are not available. Their smaller size enables them to go over water-ways too shallow or too narrow for the steamers. In those parts of the province where the rivers dry up with the advent of the cold weather, their use is confined to the rainy season, and the greater part of the carrying business takes place during these three or four months. In South and East Bengal, abounding in large navigable rivers, they are employed in transporting goods all round the year and form an essential factor of rural trade.

They are indispensable in the flood area.

The use of boats is indispensable during the annual flood in those parts of the province which are subject to it. In this flood area, it is often impossible to go from one house to another without the help of a boat, and every rural family, which can afford it, keeps a small *dingi* so as to be able to go here

and there. The cultivator, when he wants to go to his field lying at some distance from his house, depends on his *dingi* to carry him there ; when he goes to the market to buy or sell anything, it becomes indispensable. The *faria* who collects jute in this season from individual cultivators does it by means of a boat. Similarly, the *bepari*, who brings his jute to a baler or to his agent in some of the branches in the rural areas, carries it in a boat. The baler in his turn transports the jute from the out-agency in large boats towed by steam launches.

An obstacle to water transport.

A serious menace to the water transport and communication, as also to agriculture, in the province has recently made its appearance in the form of water-hyacinth. This floating plant has a wonderful propagating power and a great fighting capacity. Once it finds its way into some *khal, bil,* or tank, it will kill all other aquatic plants and cover it entirely in a surprisingly short time. During the flood season it enters the paddy fields, being carried there by the current or the wind, and does serious damage to the crop. It chokes up *khals, bils* and even small rivers by its rampant growth, and renders navigation an extremely difficult task. It may appear incredible, but none the less, it is a fact, that on several occasions large river steamers were held up by these weeds in this province. Navigation by country boats in *khals* and other narrow watercourses is all the more difficult and in many cases is literally impossible. These *khals* are sometimes blocked in such a way that a man can actually cross them by walking over the weeds.

The water-hyacinth.

Its spread.

Nobody knows how and when this pest first made its appearance in this province. There is hardly any evidence to show that it existed anywhere in Bengal before the nineties of the last century. It first attracted notice as an aquatic weed with beautiful

flowers ; and in a number of cases its spread into new areas was caused by the action of individuals taking fancy to the plant for the sake of its flowers and carrying it over to distant places for the purpose of growing it. Thus Mr. G. Morgan, a jute merchant, took in 1905-6 a few plants from Ballyganj to his residence at Narayanganj with a view to grow them in his tank there.[1] The tank was soon overgrown by the weed which then spread to other adjacent tanks, and finally, to the rivers. Similarly, the introduction of the pest in the district of Tippera is attributed to the action of Mr. O'Klay of the Indian General Navigation and Railway Co., who first carried it to Chandpur.[2]

But the most potent factors in the dissemination of the weed in this province are the annual flood, and the wind and the current that prevail during the time. As the greater part of the land surface in the flood districts remains under water, these floating plants find an enormous scope for travelling from place to place, and are driven by the wind or the current. It is for this reason that the problem has taken the most serious form in those districts of the province which are subject to the annual flood. The extent of the damage done by these plants will be realised from the following table which gives the area affected by them in these districts in 1926[3] :—

1 Final Report (1926) of the Special Officer on Water-Hyacinth, Government of Bengal, p. 5.

2 *Ibid.*

3 Final Report (1926) of the Special Officer on Water-Hyacinth, Government of Bengal, p. 10.

District.	Area in sq. miles.					
	Cultivable lands.	Tanks, ditches and *dobas*.	Navigable channels.	*Khals* which dry up.	*Bils*.	Total.
Pabna	276	37	14	14	41	382
Rajshahi	340	15	7	6	14	382
Faridpur	158	79	111	52	62	462
Backerganj	59	63	55	37	39	253
Dacca	186	73	58	69	61	447
Mymensingh ...	497	116	137	91	183	1024
Tippera	416	111	82	88	133	830
Noakhali	4	8	2	3	5	22
Jessore	112	22	86	8	36	264
Khulna	157	7	16	11	12	203
Total	2205	531	568	379	586	4269

We see from the figures given above that the total area affected in these 10 districts is 4269 sq. miles or 2,730,160 acres. It should be remembered that this extensive area has been infected by the weed in the course of the last 20 or 25 years. If it continues to spread at such an alarming rate, there is no doubt that, before long, transport and communication by water, which is a special natural facility in this part of the province, will be completely paralysed. The increasing inroad of the weed on cultivable lands is also a matter of very serious concern. In one particular part of the district of Mymensingh, there is an area of a hundred square miles, where the cultivators have given up producing any crop, owing to the wholesale damage done year after year by this weed. Many of them have left the area altogether in

disgust surrendering their lands and have settled in other places.[1]

Eradication.

The eradication of this dangerous weed is a thing of the utmost importance in this province, both from the standpoint of agriculture and that of rural transport. But the task is no simple one. The cultivator is not indifferent to this evil. He tries his best to keep it out of his field, but it is a thing in which individual action is not likely to produce any lasting result. So long as any of these plants are allowed to remain in an area, it is only a question of a month or so that they will cover the whole of it. As a matter of fact, every year the greater part of this pest is destroyed by the action of the sun after the flood water subsides. The cultivator ploughs the dried plants along with the soil, while most of those in the *khals, bils,* and ditches die in the cold weather as they dry up. But a small proportion always remains and it is this, which, during the next flood season, multiplies itself and spreads over the entire area. Moreover, in the rivers, the weed does not suffer from this want of water, and it continues to flourish in all seasons of the year.

For a successful extermination of this pest, it is essential that simultaneous action in all the affected areas should be taken. The most suitable time for doing this is during the dry weather when the quantity of this weed is automatically reduced to the minimum. It is futile to rely for this purpose on individual initiative, for the negligence of the few is sure to nullify the earnest efforts of the many. There is also the consideration that individuals are not likely to take any action with regard to the common waterways, such as rivers and *khals*. Moreover, the pest

[1] Final Report (1926) of the Special Officer on Water-Hyacinth, Government of Bengal, pp. 4-5.

has also spread over some parts of the adjoining provinces of Assam, and Bihar & Orissa. It is thus desirable that measures for its eradication should be taken by all the three provinces together, and this is only possible when the task is undertaken by the State.

Bullock carts.

In many of the districts of Bengal, the use of boats as a means of transport is not, however, possible, except to a limited extent. This is due to the absence of a sufficient number of water-ways necessary for boat traffic. In the rural areas in these districts, transport of goods is generally made by means of the primitive bullock cart. Thus in Northern and Western Bengal, it is a very common thing to see the bullock cart with its heavy load and with its cracking sound making its progress at an extremely slow rate over village roads. The cart is also used as a conveyance by the well-to-do people in these parts of the province. The relative importance of the cart as a means of rural transport in the different districts will be realised from the following table[1] :—

District.	No. of carts in 1925-26.	District.	No. of carts in 1925-26.
	Thousand.		Thousand.
24-Parganas ...	... 36·9	Jalpaigury ...	... 24·8
Nadia ...	... 57·5	Darjeeling ...	... 3·4
Murshidabad	... 69·9	Rangpur ...	... 47·1
Jessore ...	... 69·2	Bogra ...	... 17·8
Khulna ...	... 14·7	Pabna ...	... 14·3
Burdwan ...	... 86·0	Malda ...	... 40·1
Birbhum ...	... 64·9	Dacca ...	... 7·4
Bankura ...	... 55·1	Mymensingh	... 37·3
Midnapore ...	... 45·4	Faridpur ...	... 2·2
Hooghly ...	... 15·3	Backerganj ...	... ·9
Howrah ...	... 2·3	Chittagong ...	... 1·5

1 Agricultural Statistics of Bengal, 1925-26.

	Thousand.		Thousand.
Rajshahi	42·6	Tippera	·7
Dinajpur	82·2	Noakhali	2·9
		Chittagong Hill Tracts	·005

It will be seen from the above figures that the number of carts is generally very large in those districts of the province where the facility for water communication is small. Compared with Burdwan, Birbhum, Nadia, Murshidabad, Dinajpur and Rangpur, the number of carts in the flood districts, such as Backerganj, Faridpur, Dacca, Tippera and Noakhali, is very small. This is mainly due to the fact that these latter districts generally use the boat in the place of the cart. The paucity of carts in the hilly districts of Darjeeling, Jalpaigury, Chittagong and Chittagong Hill Tracts is explained by the uneven character of the country.

Pack animals.

The use of carts depends on the existence of suitable roads. Where roads do not exist, the cart also cannot be used. In such cases, the rural people generally employ pack animals—chiefly ponies and bullocks. A pony or a bullock possesses this advantage over a cart that it does not require a wide road ; a fair-weather track is quite sufficient for its purpose. It can even walk over the narrow *ails*, that is, the boundaries between two adjacent plots of cultivated land. There is also the advantage that the cost of its maintenance is considerably less. Where the quantity of goods to be transported is small, the use of a cart is not economical. Thus for the needs of a small dealer in a village *hat*, a pony or a bullock is much more convenient than a cart.

Palki and *dooli*.

There is still another means of transport peculiar to the rural areas, which is used for carrying passengers only. This is the *palki* and the *dooli*, two kinds

of litter borne by four persons in the case of the former and two persons in the case of the latter. They are used in those parts of the rural areas where neither boats nor carts are available. The principal demand for these means of conveyance comes from women who generally observe the *purdah* in this province. The total number of persons supported by this business in Bengal was 93,817 in 1921. There seems to have been a rapid decline in the number of such persons in course of the last few years, indicating that the demand for these forms of transport has been diminishing. This fall in demand is largely due to a diminution in the rigours of the *purdah* system as a result of the spread of modern ideas among the rural population.

CHAPTER IX

RURAL LABOUR

Proportion of hired workers in agriculture and industries in rural areas.

An important feature of the organisation of agriculture and of the industries carried on in the rural areas is the small proportion of hired workers employed in them. There are 9,274,927 persons in Bengal, who cultivate their own land. As against these, hired workers in agriculture number only 9345 farm servants, and 1,796,157 field labourers, persons who are casually employed to work on the land.[1] There is thus only one hired labourer to every five who cultivate their own land in Bengal. This proportion seems to be extraordinarily small when compared with a country like England and Wales where, according to the census of 1911, there are over three hired workers to every farmer. The contrast in this respect becomes greater when we remember that much of the agricultural work done by hand in Bengal is performed by labour-saving appliances and machinery in the other country.

Of the total number of agricultural labourers in the province, a considerable proportion is employed in cultivating the land held not by the ordinary cultivators, but by landlords, tenure-holders, and village money-lenders, called *mahajans*. In Bengal, almost every landlord or tenure-holder in the rural areas keeps some land near his home in *khas* possession, on which he grows agricultural products for household consumption. This land is generally cultivated by hired labour. A good deal of land is also held by *mahajans* who generally arrange its cultivation

[1] Bengal Census Report, 1921, p. 381.

on the *barga* or the *sanja* system, but who sometimes cultivate it by means of hired labour. It will thus be clear that, when we take these facts into consideration, the proportion of hired labourers to ordinary cultivators becomes even smaller than what is stated above.

Explanation of the small proportion of hired workers in agriculture.

The explanation of this small proportion of hired workers in agriculture is to be found in the size of the agricultural holdings in the province. The area of land held by the majority of cultivators is so small that, with the assistance of the members of their respective families, they can supply most of the labour that is needed for cultivation. Hired labour is regularly employed only by those amongst them whose holdings are comparatively large, and by those agricultural families which do not contain adult and able-bodied workers to cultivate their lands. The average cultivator does not require to employ it, except on such occasions as the thinning and weeding of jute and the harvesting of rice. Even on such occasions, the need for it is largely obviated by the system of mutual exchange of labour prevalent amongst the cultivators.

Employment of hired labour in industries.

Employment of hired labour in the rural industries takes place to a much less extent than even in agriculture. We have seen that most of these industries are in the domestic stage and are carried on by persons working in their homes. In exceptional cases, one or two outside apprentices are taken ; but ordinarily, those who work together are members of the same family, and their earnings go to the common family fund in the form of profits. Hired labour is, however, employed in a few rural industries, *e.g.*, the manufacture of brass and bell-metal articles, in which production is carried on in small workshops

organised by some capitalist employer or by a master worker financed by a *mahajan*.

Hired labour in the business of transport.

Nor is the system of wage-payment generally prevalent in the business of transport. Apart from the railways and the steamer services, which connect the principal centres of trade and industry in the province, the chief means of transport in the typical rural areas are the ordinary country boat and the bullock cart. Both the boatmen and the carters are generally independent workers and are not in the employment of any other person. The boat is hired on a fixed monthly rent by the *manjhi* (head boatman) on his own responsibility for which he is entitled to receive a definite share of the earnings, in addition to the remuneration for his own labour. When this allowance for the hire of the boat is made, the remainder of the earnings is divided equally among all the boatmen including the *manjhi* himself. The carter, on the other hand, works alone and generally owns the cart as well as the bullocks by which it is drawn. As he has no fixed and regular employment, he is ready to undertake any carrying job that is offered to him at a reasonable rate. He carries both goods and passengers from place to place with his home as the centre of his operations. Of the earnings, a large part goes to cover the trade expenses, *i.e.*, the cost of maintaining the cart and the bullocks, and the remainder constitutes his own profits.

Other kinds of labour in rural areas.

There are various other kinds of labour in the rural areas, which are demanded not by any class of employers or businessmen but by the consumers directly. These are carpenters, thatchers, masons, washermen, barbers, domestic servants, etc. The carpenters are generally employed in making the

roofs of the corrugated iron houses of the rural people. Their labour is also required for several other purposes, such as the production of wooden furniture, agricultural implements, doors and windows of buildings and of the better kind of huts. But their employment for these purposes is very limited in extent. The rural people, as a rule, use very little furniture. The ordinary cultivators often do without any wooden furniture at all, while the more well-to-do amongst them and members of the middle classes are generally content with only a few *chowkis* or bedsteads. Of the agricultural implements, only the wooden frames of ploughs and rakes are made by the carpenter. Buildings are very scarce in the rural areas ; and even huts with wooden doors and windows are comparatively small in number. By far the largest number of houses in the rural areas have thatched roofs and walls of bamboo mats. The construction and repair of these houses are made by a class of labourers, called *gharami* or *chaial* (thatchers). Very often the cultivator builds his own house with the help of a professional thatcher who is employed only for a few days to supply the necessary guidance and expert knowledge. As regards the repairing of such houses, the work is much easier and is usually done by the cultivator without the employment of the thatcher. The better classes of people, however, always employ him for these purposes. The *gharami* or the professional thatcher is often a cultivator himself, who takes up this work when he has nothing to do on his land. Of the other kinds of labourers, mentioned above, barbers are almost in universal demand, although it must be said that the Mahomedans, who almost without exception wear beards,

need their services less frequently than the Hindus. Their presence is also essential in most of the Hindu social ceremonies. The demand for the labour of washermen and domestic servants is very limited in the rural areas and is practically confined to the comparatively rich classes. As buildings are very scarce in the rural areas, the demand for the labour of masons also is extremely small.

Hired labour in agriculture.

In spite of the fact that the proportion of hired workers in agriculture is small, it gives employment to by far the largest number of wage-earners. The total number of agricultural labourers with their dependents in Bengal, according to the Census Report of 1921, is 4,408,147. This is somewhat over 9 per cent. of the entire population and is greater than the number supported by industries—both urban and rural. As the operations in agriculture are mostly seasonal in character, those who work on the land suffer from the disadvantage that their occupation does not provide regular employment throughout the year.

Seasonal character of the demand.

The demand for agricultural labour widely fluctuates from one season to another in course of the same year. This fluctuation also depends largely on the nature of the crop that is grown in a particular area. Thus, in the jute-growing districts, demand for hired agricultural labour arises in February when the fields are prepared and sowing begins in the case of low lands. This demand continues throughout March, April and May, during which period sowing in other lands takes place and the operations of weeding and thinning are performed in all lands at short intervals. After May, the jute plants require little attention and the demand for labour for jute crop practically disappears, until it revives again to a certain extent in

July and August, when the crop attains maturity and becomes ready for cutting. By the end of August, harvesting is completed and the demand for labour, so far as the jute crop is concerned, altogether ceases, until it appears again in the following February or March, when the land for the next crop has to be prepared. In the case of *aus* rice, the preparation of land and the sowing begin almost at the same time with jute. Harvesting of the crop also takes place in July and August. The amount of labour that is required for this crop is much less than that involved in the production of jute. But as *aus* rice is produced in the same period in which jute is grown, the demand for labour arising from it is combined with that caused by the production of the latter.

Much more important than either *aus* or jute is *aman* or winter paddy which alone accounts for more than two-thirds of the net cropped area in the province. We have seen that there are broadly two varieties of *aman* paddy—the broadcast and the transplanted. The sowing of the former takes place towards the end of May or in the beginning of June, while the transplantation of the latter is usually made in July and August. It will thus be seen that the work of preparing the land for the cultivation of winter rice is extended over a longer time than in the case of *aus* paddy or jute. The crop is harvested in December and January, and from that time onward until sowing or transplantation takes place, the cultivator gives his land a number of ploughings at intervals. There is thus no concentration of the work into a short period, and the cultivator can do it at greater convenience. When sowing is over, broadcast *aman* requires two or three weedings before the flood water comes into the field. The work of

transplantation is a slow and tedious one, and creates a fairly large demand for hired labour in those areas where this particular kind of rice is grown extensively. The greatest demand for such labour arises, however, in December and January when the winter paddy is harvested. The reaping of this crop, its transport from the fields to the cultivators' houses, and the threshing of the paddy—all concentrated into a short period—involve an enormous amount of labour ; and in most of the districts of the province, there is created in this period an unusual demand for hired agricultural workers. The necessity of hiring labour for performing these operations also arises from the general prevalence of malaria at this time, which renders a large proportion of the cultivators incapable of any work at least for the time being.

The supply of agricultural labour is mostly local.

Agricultural labourers in Bengal are mostly people of the locality in which they work. They consist of men who have no cultivable land at all, or who have so little land that they have mainly to depend on their earnings as labourers. Those who are absolutely landless have been mainly reduced to this state by their land being either washed away by the destructive action of rivers, or sold on account of debt. The total number of such absolutely landless labourers does not as yet seem to be very large, although it must be admitted that it has been growing in recent times, owing to the policy of the money-lenders in buying out the holdings of cultivators for the non-payment of debt. Even in such a case, we have seen, the money-lender sometimes re-settles the purchased holding with the former raiyat on a produce rent. As regards the other class of labourers who are not altogether landless, but possess a very small area of land and are therefore compelled to

work as hired labourers, their present position is chiefly the result of the gradual subdivision of holdings with the increase in numbers. The average cultivator in this province considers it beneath his dignity to work as a hired agricultural labourer, and so long as he is able to extract even a bare subsistence from his own land, he does not condescend to work as a wage-earner to a fellow cultivator.

Yet there is some mobility from place to place.

Although the supply of agricultural labour is mostly local, it does not infrequently happen that, in many parts of the province, the local supply is largely supplemented by workers coming from other places, particularly in times when the demand for hired labour becomes large. Thus from the districts of Dacca, Faridpur and Noakhali, thousands of persons go every year to Backerganj to harvest the winter rice crop there. From Bankura, there takes place a temporary annual migration of large numbers of Santals, Bauris and other classes of people to Hooghly and Burdwan to work as agricultural labourers during the harvesting season.[1] These semi-aboriginal people go with their wives, children and household goods, live in temporary huts in the place of their employment, and return home after two or three months earning considerable sums as wages. Similar migration of these classes of people also takes place in large numbers from Midnapore to other districts during the sowing and the reaping periods.[2] Indeed, during these seasons, large importation of agricultural labour is made by Jessore, Pabna, Rajshahi, Rangpur, Dinajpur and other districts of the province. It should, however, be noted that, excepting in the case of the Santals and other semi-aboriginal people of the western districts of the pro-

1 Settlement Report of Bankura, p. 7.

2 Settlement Report of Midnapore, p. 30.

vince, the workers who thus temporarily migrate from their native place to other districts in search of agricultural work, consist only of able-bodied males. They always leave their wives and children at home and return there as soon as their work is finished. The other kinds of labour employed in the rural areas do not possess even this limited degree of geographical mobility. With the exception of the *palki* and *dooli* bearers who generally come from the adjoining province of Bihar and Orissa, the non-agricultural labourers in rural tracts are almost entirely men of the locality in which they earn their living.

The system of wage-payment.

The system of wage-payment that obtains in rural Bengal has three forms—payment in cash, payment in kind, and a combination of both. Of these three forms, the last is the one most prevalent in Bengal. The census of rural wages periodically taken by the Department of Agriculture, Bengal, throws much interesting light on the matter. The enquiry is made on a fairly extensive scale, being conducted in about 20 villages in each of the subdivisions of the province. So far as agricutural labour is concerned, the returns obtained go to show that wages, when paid entirely in kind, are generally in the form of paddy, sometimes accompanied by *kalai*—a kind of pulse. The following table gives the distribution of the villages examined in the census of 1925, according to the system of wage-payment prevailing in them:—

Total no. of villages.	No. with cash wages.	No. with cash wages with supplements.	No. with grain wages.	No. with cash wages as well as grain wages.
1943	399	1275	108	161

Supplements to cash wages are generally in the form of tobacco, tiffin, oil for bathing and a meal.

The tobacco supplied is that smoked by the labourers during the working hours. The figure in column 5 indicates that in these villages both the cash and grain systems prevail. Out of the 108 villages in which only the grain system obtains, 18 are in Bankura, 15 in Dacca, 42 in Faridpur and 33 in Backerganj.[1] It will be seen that in 1674 villages, *i.e.*, 86 per cent. of the total number of villages examined, the system of cash wages with or without supplements is prevalent, while in another 161 or 8 per cent. of the villages the cash system prevails side by side with the grain system.

As regards the wages of carpenters, returns were obtained from 1569 villages in the census of 1925. In practically all of them, cash wages are paid with the same kind of supplement—tobacco, tiffin, oil for bathing and a meal. Sometimes, carpenters are employed on contract or on piece rates, and in such cases, they do not get any supplement. The wages census was confined only to three classes of labour—agricultural workers, carpenters and blacksmiths. Of these, blacksmiths are not strictly speaking wage-earners, for they do not hire themselves out to any employer, but carry on the manufacture of various articles of iron on their own account and as independent producers.

The wages of thatchers are ordinarily paid in cash which is supplemented by payment in kind in the form of tiffin, meals, tobacco, etc. Masons are paid everywhere cash wages, but they do not receive any supplement of the kind mentioned above. Washermen work according to piece rates, while barbers charge a definite rate per head served by them. In the case of the aristocratic and well-to-do

[1] See Report on the Wages Census of Bengal, 1925.

families, they hold part-time employment on fixed monthly wages. For the services rendered by them at the time of Hindu social ceremonies, they receive their remuneration partly in cash and partly in the form of meals, clothes, rice, etc.

Rates of wages of agricultural labour.

Cash wages of agricultural labour in 1916 and in 1925 in the different districts of the province are given in the following table[1] :—

District.	Daily wages. 1916		1925		District.	Daily wages. 1916		1925	
	A.	P.	A.	P.		A.	P.	A.	P.
24-Parganas	7	0	10	0	Darjeeling	5	9	10	0
Nadia ...	4	9	9	0	Rangpur ...	7	9	10	0
Murshidabad	4	6	8	0	Bogra ...	7	9	11	0
Jessore ...	8	0	12	0	Pabna ...	6	9	13	0
Khulna ...	8	6	13	0	Malda ...	5	0	6	0
Burdwan ...	7	3	11	0	Dacca ...	7	6	12	0
Birbhum ...	5	0	7	0	Mymensingh	7	6	13	0
Bankura ...	4	9	9	0	Faridpur ...	9	0	13	0
Midnapore	5	3	8	0	Backerganj	7	6	12	0
Hooghly ...	7	3	12	0	Chittagong	8	6	13	0
Howrah ...	6	9	12	0	Tippera ...	5	9	11	0
Rajshahi ...	8	3	15	0	Noakhali ...	6	6	8	0
Dinajpur ...	7	6	11	0	Chittagong Hill Tracts	8	0	16	0
Jalpaigury	8	3	12	0					

It will be seen from these figures that there is a great divergence between the rates prevailing in

[1] See Reports on the Wages Census of Bengal, 1916, and 1925. The cash rates given here include the value of the supplements, where they are paid in addition to cash wages. The Report on the Census of 1916 gives the wages of unskilled labour and not particularly of agricultural labour. But they practically mean the same thing. I made a reference to the Director of Agriculture, Bengal, on these points and his explanation was the same as is given in this foot-note.

different districts both in 1916 and 1925. Rajshahi and Malda are two contiguous districts, but in spite of this fact, the rate in the former in 1925 is 150 per cent. higher than that in the latter. Similarly, Noakhali and Chittagong Hill Tracts are very near to each other, but the rate in the latter is double that in the former. There are less but still considerable differences in the wages of agricultural labour between other adjacent districts. The existence of such divergence in the wage rates between one district and another indicates that mobility of labour between them is very imperfect. It will also be noticed from the figures given in the table that, in the course of the 9 years intervening the two censuses, there has been a great increase in wages in most of the districts of the province. Thus in Chittagong Hill Tracts, Bankura, Nadia, Rajshahi, Pabna and Tippera, the rise has been nearly 100 per cent. With the exception of Malda, where the rate is the lowest in the whole province, there is no other district where the increase has been less than 40 per cent.

Rates of wages of carpenters.

The same features are also observed in the wages of carpenters, as given in the Reports on the Census of Wages, referred to above, although it must be admitted that in this case the difference in the rates between contiguous districts is less conspicuous. As regards changes in wages, the increase in the rates during the period from 1916 to 1925 is almost as great as in the case of agricultural labour. These facts will be clear from the following table which gives the wages of carpenters in various districts in 1916 and 1925[1] :—

[1] See Reports on the Wages Census of Bengal, 1916, and 1925.

District.	Daily wages. 1916		Daily wages. 1925		District.	Daily wages. 1916		Daily wages. 1925	
	A.	P.	A.	P.		A.	P.	A.	P.
24-Parganas	11	9	18	0	Darjeeling	12	6	19	0
Nadia ...	10	9	16	0	Rangpur ...	11	6	16	0
Murshidabad	9	0	14	0	Bogra ...	12	0	16	0
Jessore ...	12	0	18	0	Pabna ...	12	0	20	0
Khulna ...	13	0	16	0	Malda ...	12	0	18	0
Burdwan ...	11	3	20	0	Dacca ...	11	6	17	0
Birbhum ...	9	0	12	0	Mymensingh	13	0	18	0
Bankura ...	8	3	15	0	Faridpur ...	14	6	16	0
Midnapore	8	6	14	0	Backerganj	8	0	15	0
Hooghly ...	11	6	18	0	Chittagong	12	6	16	0
Howrah ...	10	6	20	0	Tippera ...	10	0	18	0
Rajshahi ...	13	3	17	0	Noakhali ...	11	6	16	0
Dinajpur	12	9	21	0	Chittagong Hill Tracts	16	0	30	0
Jalpaigury	12	0	23	0					

We see from the above figures that in Howrah, Bankura, Jalpaigury, Backerganj and Chittagong Hill Tracts, the wages in 1925 are almost twice as much as they were in 1916. In most of the other districts the rise in the rates is 50 per cent. or higher. There are also considerable differences between the wage rates of different districts. Burdwan and Birbhum are adjacent districts, but the rate in 1925 is 66 per cent. higher in the former than in the latter. A greater difference exists between Noakhali and Chittagong Hill Tracts. Yet, on the whole, this difference between districts which are near to one another is less than in the case of agricultural labour.

Rise in the wages of other kinds of labour.

There is a similar rise in the wages of other kinds of labour during the last decade or so. Thus, thatchers, masons, domestic servants, washermen, all earn considerably higher wages at the present time than they did before this period. These increases in the rates of wages are not the same in different

kinds of labour, nor even in the same kind in different parts of the province ; but, in general, it may be said that the wages of labour in the rural areas have risen in course of the last few years by an amount varying from one-third to two-thirds of what they were before.

The rise in money wages does not necessarily mean a rise in real wages.

This general advance in the earnings of labour does not, however, represent a corresponding increase in the prosperity of the wage-earning classes. As a matter of fact, there has hardly been any rise in this prosperity during the period in question ; for if money wages are now greater, prices of things also are higher. There was an enormous rise in the price level in this, as in other countries, during and after the last great war. Taking 1913 as the base year, the index number of prices in India was 201 in 1919, and though since that year there has been a considerable fall in it, the price level is still about 50 per cent. higher than what it was before the war.[1] It is also significant that for some time past the price level in this country has not been manifesting any tendency towards a fall. From the year 1926, the index number of prices in India has always been within very narrow limits of 150.[2]

It was mainly the result of the rise in prices.

The rise in the wages of labour that has taken place in rural Bengal has been mainly in sympathy with the general upward movement of prices. It has been chiefly in the form of an adjustment of wages to the higher cost of living. As the prices of things went up, the wage-earners found it difficult to maintain themselves on the former wages, and they naturally demanded increments. On the other hand, the rising prices of commodities brought increasing

1 The Statist, Oct. 13, 1928.
2 *Ibid.*

profits to the producers, and they were in a position to employ labour on higher wages. It should be stated here that this adjustment of wages to rising prices has neither been complete nor very prompt. Wages in all countries have a tendency to lag behind prices. The determination of the earnings of labour is subject to a much greater friction than that of the prices of commodities. So far as rural labour in this province is concerned, the rise in wages was not so high as to fully compensate the greatest fall in the purchasing power of the money income. Much of the upward movement of wages actually took place after the price level reached the maximum height and began to move in the opposite direction. Again, in spite of the substantial reduction of prices that has occurred during the last few years, there has not as yet been any fall in wages from the height they reached in consequence of the rise in the price level.

The daily rates of wages do not truly indicate the average income.

The daily rates of wages of rural labourers, as given above, do not truly indicate their average income, on account of the fact that employment is very irregular. This is particularly the case with agricultural labour. It has been said above that the demand for labour in agriculture is seasonal in character. On the whole, it may be said that the average agricultural labourer in this province does not find employment as hired field worker for more than six months in the year. Supposing that his wages are 12 annas a day, his income from this source comes up to Rs. 11-4-0 a month. This is not sufficient to maintain him and his family even on the lowest possible standard, and, as a consequence, he has to supplement it in other ways. In many cases the agricultural labourers possess some land from which they derive a small income. Often during the latter part of the cold weather, they work

as labourers in the construction and repair of roads and in the excavation of tanks in the rural areas. Indeed, the agricultural labourer picks up any casual employment suitable to him during the time in which he has no work on the land. In spite of these subsidiary occupations, the average agricultural labourer in this province has to remain idle for a considerable part of the year, simply for want of employment.

Insufficient employment of cultivators.

From this disadvantage of insufficient employment suffer not only the agricultural labourers but also the cultivators themselves. The small size of the agricultural holdings, combined with the fact that the greater part of the cultivated area in the province bears annually only a single crop of winter rice, keeps the average cultivator employed on the land for not more than 7 or 8 months in the year. During the remaining 4 or 5 months, he has practically nothing to do. This enforced idleness of a large proportion of the population, consisting of cultivators and field labourers, is a source of great national loss, and is one of the important causes of the poverty of the people. It is highly desirable that suitable home industries should be started in the rural areas, which these classes of people can follow as a subsidiary occupation during this period of unemployment.

Need for subsidiary occupations.

One such industry carried on in the district of Dacca by agricultural and other classes as spare-time occupation is the manufacture of mother-of-pearl buttons. The industry is of recent growth and was for some time in a flourishing condition. But for the last 3 or 4 years competition from Japan has been very severe, and it is now in a declining state. The principal reason why the local producers are not able to successfully stand the competition from Japan is that the implements used by them are very crude and inefficient. As a

result of the use of these crude appliances, not only the output is small, but also the quality of the product is unsatisfactory. If this defect in the method of production be removed by the introduction of up-to-date and efficient appliances, there is every reason to believe that this subsidiary domestic industry in the district of Dacca will be able to hold its own against external competition.

Charka spinning as a subsidiary occupation.

It is interesting to discuss in this connection the possibilities of *charka* (spinning wheel) spinning as advocated by Mr. Gandhi. Spinning of yarn by the *charka* is to be followed not as a principal occupation, but as a subsidiary one by the great mass of the agricultural classes in this country, which has little or nothing to do during a considerable part of the year. In several respects it is a suitable spare-time employment for these classes of people. The product has a large and steady demand. There is not much difficulty in marketing: it can easily be sold to the handloom cotton weavers who are scattered all over the province. The amount of capital that is required for this business is also very small. A spinning wheel can be had for Rs. 2 or 3 and a similar sum is sufficient for the supply of cotton that is used as raw material. The work also is comparatively simple and does not require any special training on the part of the spinner, so long as he aims at producing the ordinary coarse yarn with which *khaddar* is made. But in spite of all these redeeming features, there is one serious defect for which hand spinning by the *charka* does not make a strong appeal to the average individual. This drawback lies in the fact that spinning by means of the *charka* is an extremely slow process and brings an entirely insignificant income to the worker. Even in the opinion of its

advocates a person can earn only about 2 annas by working 7 or 8 hours in a day.[1]

Mobility of labour between different occupations.

We have considered above the mobility of labour from place to place. This may be called the geographical mobility of labour. There is another kind of mobility which is not between different places, but between different occupations. Thus, if the earnings of coolies be substantially greater than those of agricultural labourers in a place, many of the latter will adopt the occupation of the former. This movement of labour between two occupations caused by a difference in earnings is immediate, if the workers in one occupation can transfer themselves to the other without any disadvantage as regards skill and capacity. In the example given above, the work in both the occupations being unskilled, there is no such disadvantage ; and, therefore, whenever there arises any material difference in earnings, the movement will take place. As a result of this movement, the supply of labour in the two occupations will be re-adjusted and the difference in wages will disappear. Most occupations, however, require a special training or acquired skill on the part of the workers ; and where this is the case, the skilled workers in one cannot easily transfer themselves to another. Those who want to do so must receive the training and acquire the skill that are required for work in the new occupation ; while at the same time they must lose the value of the skill they possess with regard to the occupation in which they have been hitherto engaged. For this reason, movement of labour in such cases does not usually take place through a transference of the existing workers but by a diversion of the future recruits from the less to the more

[1] See the evidence of Sir P. C. Roy before the Royal Commission on Agriculture in India, Bengal Vol., pp. 375-6.

attractive occupation. In the long run, the supply of labour is adjusted to the conditions of demand, and the earnings are equalised.

Obstacles to this mobility.

But even this sort of mobility does not always exist. Thus, if the earnings of an engineer be twenty times as much as those of an unskilled labourer, the latter cannot bring up his son so as to become an engineer. The obstacles to such a movement lie chiefly in the expenses of education and training. The unskilled labourer is not able to give his son the necessary education and training because of his poverty. In addition to this barrier between one occupation and another, there is the subtle influence of environment. As Taussig says—"All the associations of nurture and family, all the force of example and imitation keep a youth in the range of occupations to which his parents belong."[1] The average man unhesitatingly accepts the conditions in which he is accustomed to live, and does not feel any ambition to rise. On the basis of this mobility the different occupations have been divided into a number of broad classes, called non-competing groups. They are called non-competing, because the members of one group do not generally compete with those of others. Since competition is absent, there is no active force tending to equalise their earnings either in the 'short' period, or in the long run. The earnings of the members of each particular group are determined by the demand of society for the kind of labour supplied by them in relation to their number.

In Bengal, as in other parts of India, there is a number of special non-competing groups not usually found in other countries. These groups owe their

[1] Principles of Economics, Vol. II, p. 130.

existence to the caste system which pervades the entire Hindu society in this country. In its original form, the system of caste was a kind of division of labour in society ; but with the progress of time, as the occupation of the father was generally followed by the son, this division of labour became hereditary and was crystallised into rigid castes—each with its own occupation and its rights and privileges in the social organisation. The members of a caste had practically no other choice but to follow the caste occupation. The son of a washerman had to become a washerman ; the son of a cobler had to become a cobler. They could not be anything else, even if they had the desire, the capacity and the means to be so. Thus from the standpoint of the student of economics, the institution of caste in this country led to the formation of non-competing groups which were more numerous and more rigid than those created by the difficulty of providing education and training, and the subtler influence of environment.

Non-competing groups.

The rigidity of the caste system—both in its social and economic aspects—has been in recent times considerably relaxed, partly under the influence of modern education, and partly under the new economic and social forces that are at work. An orthodox Brahmin finds it extremely difficult at the present time to maintain his fastidious purity in the altered economic and social environment in which he has to live. His son, when at school, has to sit by other students irrespective of their caste or creed. In a railway train, he has himself to accept such a position without even a protest. In this way, in schools, colleges, factories, workshops, trains and steamers, members of different castes and religions are forced to come in contact with one another and have to sacrifice much of their so-called purity.

Rigidity of the caste system has been relaxed in its social aspect,

and also in its economic aspect.

In its economic aspect the connection between caste and occupation has also undergone changes towards relaxation—a thing which has largely been brought about by the pressure of economic forces. We have seen in a previous chapter that, with the advent of cheap machine-made goods from large organised factories, many of the cottage industries in the province were severely hit. Unable to maintain themselves by the hereditary means of livelihood, the members of the industrial castes were compelled to give them up altogether, or to adopt other occupations as subsidiary means of livelihood. An examination of the statistics of occupations of the members of the principal castes in Bengal reveals some interesting facts in this respect. The proportions of the total number of workers in some of the castes engaged in caste occupations are given in the following table[1] :—

Occupations of selected castes.

Caste.	No. per thousand workers engaged in		
	Caste occupation.	Agriculture.	Other occupations.
Kumbhakar ...	691	211	98
Barui ...	553	297	150
Dhoba ...	505	344	151
Napit ...	485	343	172
Jugi ...	435	354	211
Karmakar ...	397	289	314
Chamar and Muchi ...	284	304	412
Goala ...	250	460	290
Bhuimali ...	204	405	391
Baidya ...	190	377	433
Brahman ...	188	401	411

1 Bengal Census Report, 1921, Part I, Chapter XII, Sub. Tab. VIII.

It will be seen from these figures that quite a large proportion of the workers in each of the castes is employed in other occupations than the hereditary one. Amongst these other occupations, agriculture accounts for by far the largest number. If we strike an average, we find that 38 per cent. of the workers are engaged in the caste occupations, while no less than 34 per cent. have adopted agriculture as their chief means of livelihood. The remaining 28 per cent. are employed in other occupations. It will thus be clear that the rigidity of the caste system regarding occupation has been considerably relaxed. Society now allows a good deal of freedom to its members in the choice of an occupation. Yet it cannot be denied that the organisation of caste still acts to a large extent as a barrier between some of the occupations. Thus in the Hindu society, nobody except a Brahmin can adopt the profession of a priest. If a washerman undertakes the work of dressing hides and skins, the business of a Chamar, his community will not tolerate it. In so far as the institution of caste imposes this sort of restriction on the mobility of labour, it acts as a special cause of social stratification not found in western countries.

Caste system and industrial progress.

It has been claimed on behalf of the caste system that the hereditary pursuit of occupations has preserved the skill and dexterity of the craftsmen in this country by transmitting them from the father to the son. When the son works under the guidance of the father, the relation between the master and the apprentice is the most cordial, and the former spares no pain in teaching the latter the processes of production. There is no doubt a good deal of truth in it ; but, on the other hand, it cannot be denied that the restriction which the caste system has im-

posed on the free mobility of labour between different crafts and industries has tended to check progress and to make for a stagnant condition of the methods of production. It has not provided suitable scope for the development of individual tastes and aptitudes, which is one of the essential conditions of industrial progress of a country.

Employment of women.

There is one particular question in connection with labour which we propose to consider now. This is the employment of women in the rural areas. According to the Census Report of 1921, Bengal has 2,271,887 female workers, who form 15 per cent. of the total number of workers of the other sex. The proportion of female to male workers in the province is very small, when compared with western countries, and even with India as a whole in which it is almost as high as 1 to 2. The more important occupations of women in Bengal with the actual number employed in each are given in the following table[1]:—

Occupations.	No. of female workers.
Agriculture	1108 thousand.
Fishing	35 ,,
Spinning and weaving of cotton	65 ,,
Spinning and weaving of jute	46 ,,
Pounding and husking of rice	171 ,,
Pottery	30 ,,
Dealing in fish	54 ,,
Dealing in grains and pulses	41 ,,
Domestic service	116 ,,
Tea	108 ,,

We see from these figures that about 50 per cent. of the female workers in the whole province are employed in agriculture. Of these, three quarters of a million are ordinary cultivators and a little more

[1] Bengal Census Report, 1921, p. 421.

than a quarter of a million are field labourers.[1] As agriculture is essentially a rural occupation, the whole of this number is employed in the rural areas. The proportion of female to male workers in agriculture in the province is about 1 to 10, and is thus even less than that for all the occupations. This is chiefly due to the fact that work in agriculture has to be performed outside home, and thus excludes practically all Mahomedan women and also those of the Hindu society in most parts of the province, owing to the prevalence of the *purdah* system. The great majority of the agriculturists in Eastern and Northern Bengal consist of Mahomedans who strictly observe the *purdah* system, and in these parts of the province, the number of female workers on the land is comparatively very small. They are more numerous in the western districts of the province, where there is a large proportion of semi-aboriginal population, such as the Santals and Bauris, and where, even amongst the Hindu cultivating classes who form the bulk of the population, the rigidity of the *purdah* system is less than in other parts of the province. In some of the north-western districts of the province, as for example in Dinajpur, there is also a considerable number of women workers in agriculture, because these districts contain a large number of Santals who are chiefly immigrants and descendants of immigrants from the Santal Parganas in Bihar.

The largest number employed in agriculture.

Pounding and husking of rice give employment

[1] The rest, nearly a hundred thousand persons are dependent on their incomes from agricultural land. The total number of women workers in the province in all occupations, as given above, includes 121 thousand beggars and vagrants, witches, etc. See Bengal Census Report, 1921, pp. 421-2.

Employment in other industries.

to 171 thousand women.[1] We have seen in a previous chapter that this is an industry carried on almost entirely by women in the rural areas. Women employed in fishing and pottery mostly carry on their business also in the rural areas. Of domestic servants and dealers in grains and pulses, a very large proportion is employed in Calcutta and other cities and towns. A large number of the dealers in grains and pulses in urban areas consists of up-country women who have for all practical purposes settled in Bengal. Manufacture of jute is purely an urban industry, being localised in the neighbourhood of Calcutta ; and those women who are employed in the spinning and weaving of jute may all be regarded as urban workers. Conversely, the great majority of the female workers in the spinning and weaving of cotton are inhabitants of rural areas who carry on their business along with male workers in their homes. Tea employs more than a hundred thousand women ; but the majority of them are immigrants from Chotanagpur, who come in entire families to work in the Jalpaigury gardens.

Good and evil of the employment of women.

Unrestricted application of women's labour in the production of wealth often leads to very harmful consequence from the standpoint of social welfare. On the one hand, the employment of young and unmarried women outside home is attended with risk as regards their moral character, and on the other, the earning of incomes by married women or widows with small children to care for, leads to the neglect of the most important of their duties. There is hardly any more wasteful method of utilising the human resources of a country than that which involves the loss of moral character of the future

[1] This also includes a very small number of female workers employed in the grinding of flour.

mothers, or the impairing of the physical efficiency of the coming generation. Work by women is a gain to society when these dangers are not present, or when they are avoided by the adoption of proper safeguards.

Employment of women in rural Bengal is generally free from the evils.

Employment of women in rural Bengal does not involve these dangers except to a very limited extent. Although there is a large number of women workers in agriculture, we have seen that nearly three quarters of them are cultivators of their own lands and only one quarter consists of hired workers. A large proportion of the women cultivators do not actually go to the fields but have their lands cultivated by means of hired male labourers. Most of the women workers in rural industries carry on their operations in their homes. As the organisation of these industries is almost entirely domestic, there is no need for even the male workers to go outside for doing their work. Of those who are employed outside home, the proportion of young women is extremely small. This is due partly to the existence of the *purdah* system which is very rigid in the case of young women but which allows some freedom to the more aged, and partly to the fact that practically all young women of the working classes are married and have not to support themselves as in western countries.

The ordinary cultivator's wife in this province has not much time which she can devote to earning an income. Her household duties keep her employed almost the whole day. She husks the paddy that is needed for domestic consumption. She has to prepare the meals of the family at least twice a day. Then she has to spend a good deal of time in feeding the cattle, cleansing the cow-shed, and making dung-cakes to be used as fuel. She has also to wash the clothes of the family. In addition to all these, she

has her motherly duties to the young children who constantly demand her care and attention. It is the women of the more well-to-do classes, who have a good deal of leisure which can be devoted to some productive pursuit. But the number of such women is comparatively very small in rural Bengal, and moreover, as they are not in need, they have not the incentive to exert themselves for this purpose.

CHAPTER X

POPULATION AND PRESSURE ON THE SOIL.

In the absence of all external trade, the population of a country would find a natural limit to its growth in its capacity to produce the means of subsistence. This check on the growth of population is removed when there is a possibility of procuring food supply from foreign countries by trade. In the present highly organised state of international trade, a country is not required to maintain its population by the produce of its own soil. If the internal food supply is insufficient for this purpose, it can be supplemented by imports from other countries.

The capacity of a country to maintain its population.

Thus the power of a country to support a population at the present time does not depend on the amount of its production of food-stuffs, but on its capacity to produce wealth in whatever form it may be. There is no direct and necessary connection between the area of a country and the population it can support, for its wealth-producing power depends on many things besides its area. A manufacturing country can support a much larger population than an agricultural country of an equal size ; since, to produce the same amount of wealth, manufacture requires much less land than agriculture. Again, other things being equal, the production of wealth in two agricultural countries of the same size may be widely different owing to a difference in the fertility of land or in the methods of cultivation. Yet, in an old agricultural country, the area of land is a very important factor in determining the size of the

It depends now on the amount of wealth it can produce.

population that can be maintained in an efficient condition.

Population of Bengal. Of the different provinces in India, Bengal has the largest population. According to the Census Report of 1921, the total population of Bengal is 47·5 millions, the corresponding figures for the more important of the other Indian provinces being 46·5 millions in U. P., 42·7 millions in Madras, 37·9 millions in Bihar and Orissa, 26·7 millions in Bombay and 25·1 millions in the Punjab. The population of this province is even greater than that of Great Britain; and, with the exception of Germany and Russia, larger than that of any European country.

Its density. Though in respect of population Bengal is the largest province in India, in area she occupies the ninth place among them. The average density of population in this province is greater than that in any other. It is interesting to compare the density of population in Bengal with that in India as a whole, in other provinces, and in some western countries, as given below:—

Density of population per sq. mile.

Bengal	579	Great Britain	485
India	177	Germany	332
U. P.	414	France	184
Madras	297	Italy	313
Bihar and Orissa	340	Netherlands	544
Bombay	143	Belgium	654
Punjab	184	Denmark	194
		U. S. A.	32

It will be seen from these figures that the density of population in Bengal is very much greater than that in the other provinces, the nearest approach being 414 in the United Provinces. Among the foreign countries mentioned in the table, there is

no one, with the exception of Belgium, in which the density is so high as it is in Bengal. It is surprising that an agricultural province like Bengal should support a much larger population in proportion to the area than the manufacturing countries of the west. The inevitable consequence of this great density of population in this province is that the standard of living of the people in general is extremely low, as compared with that in the western countries. The amount of commodities which is required to maintain a single individual in these western countries will go to sustain a number of persons in this province.

The effect of this great density.

A clearer indication of the pressure of the population on the soil is given by the relation between the actual number of persons supported by agriculture and the total area under cultivation in this province. The population supported by agriculture in Bengal, according to the Census Report of 1921, is 36·9 millions, and the aggregate area under cultivation is about 24 million acres, so that the acreage per head of the population supported is about two-thirds. If we take into consideration the fact that there is a considerable number of people to whom agriculture is a subsidiary occupation and who are not therefore included in the figure given above, the area of cultivated land per head of the agricultural population becomes still less.

Another indication of the great pressure on the soil.

The total number of agricultural workers including ordinary cultivators, farm servants and field labourers in Bengal is 11 millions. If we divide the area under cultivation by this number, we find that there is a little over $2\frac{1}{5}$ acres of land for each worker in this province. The area of land per worker in England on the basis of the agricultural

population in 1911 is about 21 acres.[1] This is nearly 10 times as much as it is in Bengal.

These facts unmistakably point out that there is a great pressure of the population on the soil in this province. Whatever other causes there may be at work, it is impossible to deny that the poverty of the agricultural classes in Bengal is in a large measure due to the small area of land which is available to the average cultivator and from which he has to extract his living. We have seen that there is much to be desired in the methods of cultivation of the Bengali farmer ; but even when he has made the necessary progress in this direction, he cannot expect to attain the same high standard of living as in western agricultural countries, so long as he has to work under the handicap of this inadequacy of land.

Density of population and poverty of agricultural classes.

Let us now study the growth of population in this province. The first regular census in this country was taken in 1872. In that year, the population of the area which now comprises Bengal was 34·6 millions. The progress of population in this province in successive decades from the time of the first census is given in the following table[2] :—

Growth of population in Bengal.

Year of census.			Population of Bengal.		Increase per cent.
1872	...	...	34·6 millions.		...
1881	...	...	37·0	,,	6·7
1891	...	...	39·8	,,	7·5
1901	...	...	42·8	,,	7·7
1911	...	...	46·3	,,	8·0
1921	...	...	47·5	,,	2·8

It will be seen from the figures given above that, excepting in the last decade, the population has been

[1] Bengal Census Report, 1921, p. 382.

[2] *Ibid.*, p. 434.

growing at a fairly uniform rate since 1872. In the period from 1911 to 1921, the rate of growth fell from 8 per cent. to 2·8 per cent. This fall is chiefly due to the adverse economic conditions produced by the war, and the great influenza epidemic which carried off an enormous number of people in this, as in other Indian provinces. Considering the last decade in the table as abnormal, the increase in population between 1872 and 1911 is 33.8 per cent. in this province. In comparison with the progress of population in other countries in the same period, the rate of growth in Bengal seems to be very slow. Between 1870 and 1910, population increased by 73 per cent. in Russia, 62 per cent. in the Netherlands, 59 per cent. in Germany, 58 per cent. in England and Wales, 47 per cent. in Belgium, 44 per cent. in Rumania, 39 per cent. in Austria, and 6·6 per cent. in France.[1] The case of France is exceptional, because in that country, population has remained practically stationary, owing to the wide practice of birth control. Of the other countries mentioned here, it is only in Austria that the growth of population has been nearly the same as in Bengal. In the case of all the rest, it has been much larger than in this province.

It is comparatively slow.

This slow growth of population in Bengal, as compared with western countries, is not the result of any preventive check exercised by the inhabitants, or of any weaker instinct on their part to multiply their number. As a matter of fact, the birth rate in Bengal is higher than that in most of these countries. The following table gives the birth and

This slow growth is not due to any preventive check.

[1] Brijnarain, Population in India, p. 11.

the death rates in Bengal and in the western European countries during the decade 1901 to 1910[1]:—

	Birth rate.	Death rate.
Bengal	36·8 per mille.	32·5 per mille.
Austria	34·7 „ „	23·3 „ „
Bavaria	34·5 „ „	21·6 „ „
Spain	34·4 „ „	25·2 „ „
Prussia	33·5 „ „	18·4 „ „
Wurtemburg ...	32·8 „ „	19·5 „ „
Baden	32·8 „ „	19·2 „ „
Italy	32·7 „ „	21·6 „ „
Saxony	32·1 „ „	18·3 „ „
Portugal	31·8 „ „	20·2 „ „
Netherlands ...	30·5 „ „	15·1 „ „
Denmark	28·6 „ „	14·2 „ „
Belgium	26·1 „ „	16·4 „ „
England and Wales ...	27·2 „ „	15·4 „ „
Ireland	23·3 „ „	17·1 „ „
France	20·6 „ „	19·4 „ „

The birth rate is high.

We see from the above table that the birth rat is higher in Bengal than in any of these western countries. It has been found by experience that the birth and the death rates, as recorded in this province, are considerably lower than the actual rates, owing to the fact that a large proportion of births and deaths goes unreported.[2] When we take this fact into consideration, the birth rate in this province becomes higher than what is given above. In spite of this high birth rate, the growth of population, as we have seen, is comparatively very small.

1 Journal of the Royal Statistical Society, Jan. 1925, p. 31. The Presidential address of Mr. G. Yule, F.R.S. for the session 1924-25, delivered to the Royal Statistical Society.

2 Bengal Census Report, 1921, p. 211.

The explanation of this fact is chiefly to be sought in the high death rate that prevails in this province. The figures in the third column of the above table give the death rate in Bengal and in European countries. We see from them that, like the birth rate, the death rate also is higher in Bengal than in these countries. The difference in the latter is even greater than that in the former. The effect of the high birth rate is largely offset by the high death rate in this province ; and, as a consequence, the growth of population is slow. It is indeed true that the growth of population is also governed by emigration and immigration, besides the birth and the death rates, and that the effect of a high birth rate may also be neutralised by an excess of emigration over immigration. The relative importance of these factors in the growth of population is always small in practically all old countries ; and so far as Bengal is concerned, those who come to it from outside are considerably more numerous than those who move in the opposite direction. Migration between this province and the outside world tends therefore to increase rather than decrease the growth of population in it. On the other hand, in the case of European countries, the general tendency is towards a net flow of population to the newly settled countries of the world, where the pressure on the soil has not yet been seriously felt.

Explanation of the slow growth of population.

To a certain extent, the high death rate in this province, as compared with those in western countries, is due to a scarcity of properly trained physicians in the rural areas, the insanitary conditions under which children are born amongst all classes of people, and the general absence of the elementary knowledge of midwifery among the rural population. The importance of the last two factors in this

High death rate.

of the British Empire, Bengal has contributed very few up to the present time. Moreover, the growing prejudice against Indians and, in general, all Asiatics, and the consequent restrictions and disabilities under which they are being placed in these countries, have taken away whatever charm emigration possessed formerly. As regards emigration within India, the present situation is that many of the other provinces are themselves in need of the same kind of relief. The density of population in the adjoining province of Bihar and Orissa and also in the United Provinces, though less than that in Bengal, is yet too high to hold any reasonable prospect of gain to the intending Bengali emigrant of the agricultural classes. As to the more remote provinces where the density is less, it is generally found that this is due either to the infertile nature of the soil, or to the fact that a large proportion of the total area is not cultivable. As a matter of fact, Assam and Burma are the only two provinces which can support a larger population than they are at present doing. Of the total cultivable area, the proportion that is actually under the plough is only 40 per cent. in Assam and 33 per cent. in Burma. This latter province, however, differs so widely from Bengal in respect of race, religion, language and even civilisation that it is not likely to attract any considerable number of the agricultural classes. Assam offers a much better scope for emigration from this province. Not only there is an extensive area of virgin land awaiting cultivation, but there is also the advantage that it is contiguous to those parts of Bengal, where the pressure on the soil is the greatest. In respect of race, religion, language and civilisation also, it is much more akin

to this province than Burma. This opportunity for migration has been largely availed of by the cultivators of the district of Mymensingh. During the decade from 1911 to 1920, the current of migration from Bengal to Assam carried altogether no less than one hundred and fifty thousand people.[1] Almost all of these emigrants were ordinary Mahomedan cultivators from Mymensingh, who went there in entire families to settle permanently in Goalpara, Kamrup, Nowgong and other districts of the Brahmaputra valley.

Although there is a large scope for further emigration to Assam, she is not likely to absorb such a number as will substantially reduce the pressure of the population on the soil in this province. Relief has, therefore, to be sought in other directions. People in western countries, confronted with this problem, have turned their activities from agriculture to manufacturing industries. Thus in England, Germany and other European countries, an increasing proportion of the population, after the advent of the 19th century, was diverted from the cultivation of land to various non-agricultural industries. More recently, Japan, faced with the same problem, followed the example of these countries in creating and developing new industries, and has already attained a measure of success which has drawn the admiration of the whole world. There was a time when industries supported a larger proportion of the population of this province than it does to-day. The decline and, in many cases, the total extinction of cottage industries in this province, as in others, which were the direct result of the competition of cheap machine-made goods of the organised industries of western countries, compelled many of the people

Development of industries.

[1] Bengal Census Report, 1921, p. 149.

employed in them to adopt agriculture as their means of livelihood. This diversion of the industrial population to the cultivation of land, combined with the natural growth of numbers, has created the present situation.

For relieving the great pressure on the soil, it is essential that there should be a reverse movement from agriculture back to industries. But the work of industrial development is beset with difficulties. The severity of external competition from countries with established industries, made possible by the progress of transport and communication, renders the development of new industries in an agricultural country an extremely difficult task. It is mainly for this reason that countries, which have sought to enter a new industrial career, have invariably protected themselves against this competition by means of tariff walls. India also has recently adopted the policy of protection to young industries. But the mere adoption of the policy of protection, even supposing that it is applied in the right way, solves only one of the many problems that face the industrial development of the country. There are others regarding capital, credit, labour, technical knowledge and industrial research, which still remain practically unsolved. It is for these various difficulties that the industrial development of the country on modern lines, which began more than half a century before, has as yet made very small progress. Judging from the slowness of the past progress and also from the present position, it is difficult to believe that there will be a substantial diversion of population from agriculture to industries in this country in the near future.

The foregoing examination of the possibilities

of various means leads to the conclusion that, while much may be done by adopting these methods, a check to the growth of population is necessary for sufficiently relieving the pressure on the soil. This is also important in view of the fact that the birth rate in this province is unusually high. This high birth rate leads, as we have seen, to a high death rate. There are thus an unnecessary waste of human life and an enormous amount of human suffering involved in the process of the natural adjustment of the population to the economic condition of the province.

Reduction of the birth rate.

A reduction in the birth rate may be brought about by a postponement of marriage. Two of the most important characteristics of Indian social life are the universality of marriage and the early age at which it takes place. In these respects, there is a very great contrast between Bengal on the one hand, and England and Wales on the other. Whereas in the former, only 7 per mille of the females between 35 and 40 years are unmarried, in the latter, this proportion is no less than 210 per mille.[1]

Postponement of marriage.

As regards marriage at early age, the following figures taken from the Bengal Census Report, 1921, are full of interest[2]:—

Universality of marriage and the early age at which it takes place.

Age period.	Unmarried per mille (females).
0—5	992
5—10	927
10—15	459
15—20	55

We see from the above table that eight per mille of the girls are married before they attain the age

1 Bengal Census Report, 1921, p. 265. The figure for England and Wales relates to the year 1911.

2 *Ibid.*

of five. Of those who are between five and ten, 73 per mille are married, while the corresponding figure for the age period from ten to fifteen is no less than 541 out of every thousand. That the proportion of unmarried women falls so sharply in the next age period between fifteen and twenty shows that most girls are married before they attain the age of fifteen. Of the total number of females aged fifteen and over, only 18 per mille are unmarried in Bengal.[1]

A girl normally attains puberty in this country at the age of sixteen. It will thus be clear from above that practically all girls are married before they attain puberty, so that during the whole of the reproductive period they live with their husbands and beget children. If marriage be postponed beyond the age of puberty, as in western countries, then for a part of the reproductive period, a woman will remain unproductive and this will tend to lower the birth rate. A rise in the age of marriage in this province is also desirable from considerations of health. It has been said before that early marriage of girls often leads to premature conception which is prejudicial to the health of both the mother and the child.

Birth control.

The rate of birth may also be brought down by the control of conception. To go back to the example of western countries once more, we find that they have been practising birth control for some decades past ; and, as a consequence, the birth rate in them has been steadily falling. This downward movement of the birth rate is particularly noticeable from the eighties of the last century. The fall in the rate of birth that has taken place in European countries

In western countries.

1 Bengal Census Report, 1921, p. 263.

in the period from 1876-80 to 1910-14 is given in the following table[1] :—

Country or State.	Birth rate per thousand of population.		Fall in birth rate per thousand of population.
	1876-80	1910-14	
German Empire ...	39·2	27·6	11·6
England and Wales ...	35·3	24·1	11·2
Scotland	34·8	25·8	9·0
Denmark	32·1	26·1	6·0
Norway	31·7	25·5	6·2
Sweden	30·3	23·5	6·8
Finland	36·9	28·0	8·9
Switzerland ...	31·5	23·5	8·0
Austria	39·9	30·8	9·1
Holland	36·4	28·1	8·3
Belgium	31·9	22·6	9·3
France	25·3	18·6	6·7
Italy	36·9	31·7	5·2

We see from the above figures that in practically all these countries there has been a considerable fall in the birth rate during the period. In the case of the German empire, and England and Wales, the birth rate at the end of the period is only about two-thirds of what it was at the beginning. This remarkable fall in the rate of birth which is observed in the case of most of the European countries after 1880 has been made possible by the progress of the art of contraception which took place about that time. With the perfection of the means of prevention, control of birth has become a comparatively easy and practicable thing and has, therefore, been resorted to by large numbers of people in these countries.

Statistics of birth rate in this province are not available from such an early date as to make a satis-

[1] Journal of the Royal Statistical Society, Jan. 1925, p. 70.

factory comparison with western countries possible. Record of births in Bengal commenced from the year 1872, but for 20 years after its commencement, it was confined to the urban areas only. The rate of birth, as calculated from these figures relating to the urban areas, was much lower than what was actually the case for the entire province. This divergence was due to a number of causes. In the first place, the actual method of recording births in that period was highly defective. Then, the urban population in this province comprised at that time, as it does at present, a much smaller proportion of females than males. Lastly, of the females who actually lived in towns, a considerable proportion used to be sent back temporarily to the village homes for delivery, when the time for it approached. Registration of births was extended to the rural areas after 1892, and it is only from that time that the birth rate for the entire province is available. From that year up to 1921, the birth rate in Bengal does not manifest any such strong and unmistakable tendency towards a fall as is found in the case of western countries. The following table gives the birth rate in this province in the first two decades of this century and the nine closing years of the last century:—

No clear indication of any fall in the birth rate in Bengal.

Birth rate in Bengal.[1]

1892-1900	36·6 per mille.
1901-1910	36·8 ,, ,,
1911-1920	32·2 ,, ,,

1 Bengal Census Report, 1921. The figure for 1892-1900 is calculated from the annual rates given in the Reports on the Administration of Bengal for the years covering that period.

It will be observed that the birth rate does not show any tendency towards a fall up to the first decade of this century. The average rate for the period 1901-1910 is slightly higher than that for the preceding period. There is a fall of 4·6 per mille in the next decade ; but this fall is mainly the result of adverse economic circumstances produced by the war, and also of the great influenza epidemic which for a time lowered the vitality of the people. It has been found that in Bengal, as in other parts of India, the birth rate is directly affected by the degree of prosperity prevailing in the country. It rises appreciably in a year of good harvest, and it falls in a year in which the harvest is bad. That the influenza epidemic also exercised a considerable influence in this respect will be clear from the fact that, during its prevalence, the birth rate in this province experienced a substantial fall. The epidemic broke out in 1918, and its severity continued unabated throughout the following year. The birth rate in 1917, *i.e.*, in the year preceding the outbreak of the epidemic, was 35·9. It fell to 32·9 in 1918 and again to 27·5 in the following year. With the subsidence of the epidemic, the birth rate again rose to 30 in 1920.[1]

There is no clear indication of birth control in this province, although it is sometimes said that it is practised to some extent. The Bengal Census Report of 1901 states, "It has been more than once pointed out by Settlement Officers that the size of the landless labourer's family is smaller than that of a cultivator and there seems to be no reason why this should be the case unless preventive checks of some

[1] See Reports on the Administration of Bengal for these years.

sort were employed."[1] It is difficult to accept this statement of the Census Commissioner of 1901 without some sort of hesitation. The average man in this province, whether he is a landless labourer, or a cultivator, has no idea about the control of birth. He accepts the number of children born to him as a thing which is predetermined for him by fate and over which he has absolutely no control. That the size of the landless labourer's family is smaller than that of the cultivator does not necessarily lead to the conclusion that the birth rate is lower. A high birth rate and a small family are not inconsistent, particularly in this country. The smaller size of the family may be due to a greater mortality among the children that are born, owing to malnutrition or insanitary conditions of living. Even supposing that the birth rate is lower, it does not follow that it is due to the employment of preventive checks. It has been said that in this country there is a close correspondence between birth rate and economic prosperity. The lower birth rate among the labourers may be the result of lesser prosperity amongst them.

Changes necessary for birth control.

If the control of birth on the lines adopted in western countries is to be practised in this province so as to have a perceptible effect on the birth rate, it is essential that the present illiterate condition of the mass of the people and their belief in destiny as regards the number of children to be born to them should be removed. So long as these conditions are present, there is no likelihood of birth control being widely practised in this province.

[1] Page 217. Cf. Panandikar, Wealth and Welfare of the Bengal Delta, p. 260. The Settlement Reports here referred to relate to some of the Bihar districts. See Bengal Census Report, 1901, p. 217, foot-note.

CHAPTER XI[1]

MIDDLE-CLASS UNEMPLOYMENT

Middle-class unemployment and its peculiarity.

One of the most serious problems of the rural areas, as of the towns and cities, in this province, is the growing volume of unemployment among the middle-class population. We have seen in a previous chapter that unemployment exists to a considerable extent amongst ordinary agricultural labourers, and even amongst the cultivators. But this latter kind of unemployment is of a seasonal character and is bound to take place so long as agricultural operations have to be performed under suitable physical conditions as regards temperature, sunshine, rainfall and other things, and so long as the workers on the land do not adopt other occupations as subsidiary to agriculture. Unemployment of industrial workers is also a periodic phenomenon, for it is mainly caused by fluctuations in trade and industry, which are also periodical in character. It occurs in a period of depression, but practically disappears with the return of prosperity. The peculiarity of the middle-class unemployment in Bengal is that it is not a periodic or seasonal phenomenon, but a chronic evil. It is present in a period of depression ; it is no less present in a period of activity. What is more important is that it has been steadily increasing with the progress of time.

Unemployment is the result of the

All unemployment is the result of the maladjustment between the demand for, and the supply of,

[1] This chapter is mostly reproduced from an article on 'Middle Class Unemployment in Bengal' contributed by me to the Calcutta Review, December, 1924.

maladjustment between demand for and supply of labour.

labour. When the supply of a commodity that is bought and sold in a market is larger than the demand for it, some part of it must remain unsold. Labour is also a similar commodity that is bought and sold in the labour market. When the supply of labour exceeds the demand, some part of it cannot find purchasers ; and this unsold amount of labour represents the volume of unemployment.

This excess of the supply of labour over the demand may be brought about by, either a change in the side of supply, or a change in the side of demand. An increase in supply, demand remaining the same, or a fall in demand, supply remaining unchanged, will create this excess, and, therefore, unemployment. If the supply of labour were perfectly elastic, so that whenever a change in demand took place, supply could at once adjust itself to it, unemployment would not arise. But the elasticity of the supply of all commodities is far from perfect ; and the supply of labour is less elastic than that of most other commodities. In fact, one of the chief peculiarities of labour is that its supply can only be very slowly increased or decreased.

Indication of the extent of middle-class unemployment.

In the absence of suitable data, we cannot measure the extent and intensity of the unemployment of the middle classes in Bengal, but some light on the matter can be thrown by an examination of the conditions of their present employment. The question of unemployment is closely bound up with the question of employment, and a mere review of unemployment does not tell the whole story. The evils of unemployment are only a part of the total evils that arise in connection with it. The same set of causes that has brought about the present unemployment of the middle classes in Bengal has also considerably depressed the market price of their

services. Thus, unemployment has brought distress not only on the unemployed, but also on the employed by reducing their income.

A university graduate can now be obtained on Rs. 30 a month, a sum which is hardly sufficient to meet his expenses during the university course. The real significance of this money income becomes clear when one takes into account the rise in prices. Compared with the pre-war basis, the general level of prices in India is at the present time about 50% higher. Thirty rupees at the present time is therefore equal to about twenty rupees before the war. It is interesting and highly significant that when a Bengali parent sends his boy to a school or a college, and invests money in his education, he expects the return to his investment to come mainly from the marriage market rather than from the general market for labour.

When the prices of commodities rise, the price of labour follows suit. The general rise in prices created by the war has been accompanied by a rise in the wages of labour in this country.[1] Other things being equal, we should expect a similar rise in the earnings of the middle classes in Bengal ; but instead of an upward movement, there has been a fall.

The condition of the uneducated part of the middle-class population is hardly better than that of the educated. The difference lies not so much in the economic distress that has seized it, or in the extent of unemployment from which it suffers, as in the fact that these things find a better expression in the case of the educated than in that of the uneducated section of the middle-class population. While

[1] See Chapter IX.

the educated young man clamours against the social and the political system as being the root of all his troubles, the uneducated man takes the misery in which he finds himself as the unalterable lot in life. He does not obtrude his grievances on the public, but suffers in obscurity. His earnings are often less than those of the unskilled labourer. Being a member of a middle class, he has a higher social status and has got to maintain an outwardly respectable show of things ; and this weighs him down all the more.

Circumstances leading to the present situation.

Let us now examine the causes that have brought about the present situation. The popular explanation of this is short and simple. It lays the blame mostly on the educational system of the province.

The popular explanation.

First of all, it is said that the university has been providing mainly cultural education which has become entirely unsatisfactory in respect of earning a livelihood.[1] In the next place, it is maintained that by adopting a low standard of examination it has artificially swelled the number of educated men. Thus on the one hand, the supply of educated men has been largely increased, and on the other, their education has been of a character which equips them badly for the struggle in life.

The original object of introducing western education in the country was to manufacture a number of English-knowing officers for the administration of the country. A system of cultural education was therefore calculated to serve the purpose ; and for a long time the educational system satisfied this

[1] It refers mainly to the Calcutta University. There is also the University of Dacca in the province, but it was started only in 1921, and since the number of students in this latter university is small, it has not as yet contributed much to the number of educated Bengalis.

purpose well. The demand for education came chiefly from those who wanted to secure administrative posts; and those who received western education were easily provided. But, with the growth of the middle classes and their increasing economic distress, the struggle for life became harder, and the number of men, who came up for education in order to secure employment provided by the State, steadily increased. The number of appointments at the disposal of the Government fell much short of the number of men who sought them; and so, many were disappointed. It is from this time that a hostile feeling against the educational system of the province was created.

The popular theory of the middle-class unemployment, though simple and plausible, does not give the complete explanation to it. The educational system is only partially responsible for the present situation. A closer analysis of the circumstances of the case reveals the fact that there are other important contributory factors. We have seen above that unemployment is the result of an excess of supply over demand. Let us examine the effect of the educational system on the demand for, and the supply of, educated middle-class men in Bengal. So far as the one-sided character of the educational system is concerned, it cannot be said to have increased the supply of educated men. If, instead of being thus only cultural, it were both cultural and vocational, the total number of educated men in the province would have been larger than what it is to-day. With regard to the other charge that the low standard of examinations has increased the number of educated men, it cannot but be admitted that it has had that effect to a large extent. The raising of the percentage of success has directly increased the number of successful men; and secondly, this cheapening of the

It is incomplete.

degrees has attracted a larger number of students in the way in which the cheapening of a commodity attracts a larger number of purchasers. The following figures show the rapid growth in the number of scholars in colleges and secondary schools in Bengal in the present century:—

Number of scholars in Bengal.[1]

	In colleges.	In secondary schools.
1901	8 thousand.	93 thousand.
1911	11 ,,	125 ,,
1921	24 ,,	209 ,,
1926	31 ,,	392 ,,

From the above table we see that the total number of scholars, both in secondary schools and colleges, in the year 1926 is about four times of what it was in 1901.

Mass education in Bengal, as in the whole of India, is extremely undeveloped. Ninety per cent. of the population of the province over the age of five were found illiterate in 1921. Conditions are very different with the middle classes who, to quote Mr. Rushbrook Williams, "constitute the bulk of the *intelligentsia* and are in point of numbers at least educated to a pitch equal to that of countries whose social and economic conditions are far more highly developed."[2] Speaking of a single province like Bengal, he says,—"with a population approximately equal to that of the United Kingdom, the proportion of the educated classes who are taking full-time University courses is almost ten times as great as in England."[3]

It is clear that spread of education among the

[1] Reports on Public Instruction in Bengal.
[2] India in 1921-22, p. 230.
[3] *Ibid.*

middle classes in Bengal has been very extensive. Whatever may be the other causes at work, there is no doubt that the examination policy has a distinct share in it. But it should also be noted here that though the educational system is partly responsible for the growth in the number of the educated middle-class men, the total supply of the middle-class men, educated and uneducated, has not been much affected by it. By increasing the number of educated men in the province, it has rendered difficult the problem of their employment ; but in so far as it has done so, it has relieved the unemployment of the rest of the middle-class population. Competition for employment among the uneducated middle classes has been diminished by the diversion of a larger number of them, receiving education, into a different field of employment.

On the side of demand, the effect of the educational system has not been to directly decrease it. On the other hand, it has in one direction at least increased that demand substantially. The rapid increase in the number of scholars called for an increase in the number of educational institutions, and of teachers. This increase in the number of institutions is very striking in the school department, where the total number of secondary schools increased from 410 in 1911 to 997 in 1926.[1]

Though the unpractical character of the education has not diminished the demand for the services of the educated middle-class people, we cannot shut our eyes to the fact that it has failed to increase that demand as it might have done. Herein lies the defect of the educational system. If there had been

[1] See Report on Public Instruction in Bengal for the year.

in the province a better provision for technical and vocational education, a considerably larger number of the members of the middle classes could have been employed in the trade and industry of the country.

Responsible as it may be to some extent, the educational system of the province is not the sole cause of this rapid growth of the number of educated men in the province. If the degree has become cheaper, the prospects of earnings also have considerably fallen, and the attractiveness of education comes more from the prospects of earnings than from the chance of success in examination. The very fact that in spite of this heavy fall in the expected earnings, the number of young men who are seeking admission to the universities is steadily increasing suggests that there is some powerful force which is driving them into this channel. The average middle-class young man finds the choice of occupation very limited. He comes to the university not with any great enthusiasm, but often with some reluctance. The phenomenal success of the boycott propaganda regarding educational institutions which was carried on some years back reflects this psychology of the student mind. The Bengali student knew that, in leaving his educational institution, he was not going to lose much and was easily carried away by the movement.

Natural growth of numbers.

The first important direct cause of the middle-class unemployment is the natural growth of numbers. This growth of numbers has been larger than the growth of the means of livelihood. An excess of supply over demand has been created. Universality of marriage, which, as we have seen in the preceding chapter, is an outstanding characteristic of the social condition of the people in Bengal, is no less a feature of the middle classes than

of the rest of the population. In the next place, even amongst the middle classes in Bengal, marriage precedes the attainment of puberty by the girl in almost all cases. In western countries, especially among the middle classes, marriage takes place long after the reproductive period begins, and during the intervening period, a girl remains unproductive. It has been estimated that the fecundity of the middle-class section of the population in Bengal is nearly double that of the same class in western countries.[1]

Abstention from agri-culture.

Agriculture is by far the largest industry in Bengal. But it is a pity that the middle-class people have practically taken no direct share in this most important industry of the province. The original reasons for this non-participation of the middle classes in the cultivation of land were probably economic. There was no such large and urgent need for employment, and what was actually needed could be found in directions more congenial and lucrative. Originally, a matter of choice based on the comparative advantages of different occupations, it slowly crystallised into a custom, and associations of social prestige and dignity grew around it.

Whatever may be the cause of this non-participation of the middle-classes in agriculture, its effect is very important and far-reaching. The economic condition of a large and growing middle-class population cannot be prosperous in a country where it has no employment in that industry which alone supports more than three quarters of the total population. There might come from this industry a large demand for the services of the middle-class men ; and in that case, the problem of their unemployment would not assume such a serious form as it has done to-day.

[1] Bengal Census Report, 1921, p. 224.

This abstention from agriculture has also made it practically impossible for the middle-classes to take to it in the future, owing to the difficulty of finding land to a sufficiently large extent within the province.

Permanent Settlement in Bengal was a permanent renunciation of the right of the State to receive the growing unearned income from land. Since the fixing of the land revenue in 1793, the economic rent of land in Bengal has very greatly increased ; but this increased unearned income from land has gone to the zamindars, the middle-men, and the raiyats.[1] One effect of this permanent fixing of the land revenue was to make land a very covetable source of income ; and people, who had money to do so, eagerly invested it in land. There came into existence a numerous class of middle-men in different stages ; and the process of sub-infeudation went on, until at the present time, in some of the districts of Bengal, we find more than a dozen grades of middle rights between the zamindar who pays revenue to the Government and the actual cultivator.[2] A large landed middle-class was thus created, and it depended mainly on the income from land.

As time went on, numbers increased, the estates were subdivided and disintegrated, and the income of the landed middle-class family shrank. The total number of the rent-receiving class in Bengal was, 1,319,302 in 1921. Taking the average size of the family to be of six members, the landed income

[1] Subsequent tenancy legislation put restrictions on the power of landlords to increase rent. At the present time the unearned income is for the greater part enjoyed by the raiyat. See Chap. IV.

[2] For a detailed examination of the causes of sub-infeudation in Bengal, see Chap. IV.

of each family of the landlord class has been estimated at a little more than Rs. 50 a month.[1] When we remember that a small number of great landlords consumes a large proportion of the total income from land, the monthly income of the rest of the landlord families must be considerably less than Rs. 50. The result of this fall in the income of the family was that the landed middle-class became increasingly dependent on other sources of income and began to compete with the landless middle-classes for employment.

Employment in landed estates.

A large number of the less educated middle-class people found employment in landed estates as managers, *naibs*, *tashildars*, and clerks ; but here also, the scope for employment has been reduced. The total number of all such employees of the landlords in Bengal including peons, etc., was 76 thousand in 1911, but it fell to 46 thousand in 1921. The Bengal landlord never pays to his officers and men more than a mere nominal salary or wage. They agree to serve on such insufficient remuneration, because they can supplement it largely by subsidiary incomes which have become customary. But all these subsidiary incomes are the outcome of illegal exactions.[2] There has been lately an awakening in the cultivating classes which has made them restive in meeting such illegal demands of the landlords' agents. The total number of men that can be maintained by such subsidiary incomes in landed estates has, therefore, been reduced.

There is also another circumstance which has tended to diminish the employment of such men in landed estates. In some of the districts of Bengal,

[1] Bengal Census Report, 1921, p. 385.

[2] These exactions from part of the *abwabs*.

a record of rights has been prepared by the Settlement Department; and where this has been done, the work of collecting rent has become much easier, so that there is not now the necessity of keeping so large a number of collecting agents as in former times.

Employment in industries. Unlike agriculture, industries have absorbed a part of the middle-classes. The total number of Indians employed in industrial establishments in Bengal as managers, supervisors, and clerks was 20 thousand in 1921.[1] Of this, by far the largest number consists of clerks. But the industrial development has as yet been quite inadequate. This is clear from the very great preponderance of the agricultural industry. Speaking about India, the Industrial Commission says:—"The industrial system is unevenly, and in most cases inadequately, developed; and the capitalists of the country, with a few notable exceptions, have till now left to other nations the work and the profit of manufacturing her valuable raw materials, or have allowed them to remain undeveloped."[2] This view is further strengthened by the Fiscal Commission which observes that the industrial development in India has not been commensurate with the size of the country, its population and its natural resources. This opinion, which is expressed about India, is also quite applicable to Bengal. The only important factory industry in the province is the manufacture of jute and it gives employment to a fairly large number of the middle-class men. The other organised industries in the province have either just sprung up, or have made very little progress, and consequently,

1 Bengal Census Report, 1921, p. 432.

2 See Report, p. 290.

cannot provide any large number of the middle-classes.

Not only the industrial progress has been inadequate, but the share that has been taken in it by the Bengalis is insignificant. Unlike the Parsis in Western India, they have left the work of pioneering and controlling industries almost wholly to the foreigners. The predominance of the foreign element is visible in practically all the modern industries of the province. The manufacture of jute which is the premier industry in the province is almost entirely in the hands of the Europeans. Conditions are not much better in engineering, paper, coal, flour and other industries. Since the control and management of these industries are chiefly in the hands of the foreigners, it is inevitable that the more responsible and lucrative of the appointments should be held by them. It should be remembered that a reduction in the preponderance of the foreign element in the control of the industries of Bengal would not increase the employment of middle-class Bengalis to a very large extent, so far as number is concerned. The total number of Europeans and Anglo-Indians employed in industrial establishments is four thousand, so that even a complete elimination of this element would provide no more than four thousand Bengalis of the middle-classes.[1] We should not also forget that the work of introducing modern industries has been performed by the Europeans, and the present demand for the services of middle-class Bengalis in industrial establishments was first created by them. On the other hand, a large share taken by the Bengalis in the control of the industries would, apart from increasing the

[1] See Bengal Census Report 1921, p. 432.

volume of employment for the middle-classes, considerably increase their wealth by the retention of the large profits that are now going to the foreigners.

Employment in trade and commerce.

Turning from industries to trade and commerce, we meet with a picture which is hardly more encouraging. The typical *bhadralok* in Bengal has in the past never cared to enter that field of employment. To be a merchant or a shopkeeper was in his opinion not consistent with the social position he occupied. The work of distributing the wealth of the province was performed by the trading section of the middle-class population. But here also we find that the Bengali merchant is being ousted by outside mercantile classes. This is particularly noticeable in the wholesale and the external trade of the province. That the English should have a large share in the external trade of the province is not surprising when we remember that they first came to this country as traders. What is more surprising and significant is the advent and establishment of the mercantile communities from other provinces, particularly the Marwaris from Rajputana. One requires only to pay a visit to the northern part of Calcutta to realise how large a Marwari colony has grown up there, and what an important part they play in the trade and commerce of that city. Already financially strong, they have grown much stronger by the opportunities afforded by the war. Their increased financial power has led them to turn their activities from trade and commerce to other directions, such as banking and manufacture.

Originally, confined more or less to Calcutta, the enterprising Marwaris have spread all over Bengal. The ubiquitous Bikanir trader is to be seen in the remotest town in Bengal, and even in villages, carrying on various kinds of business from money-

lending to trading of all sorts. While he is increasing his hold on the trade and commerce of the province, the Bengali merchant is losing his. What is the secret of his success we cannot say, but there seems to be little doubt that he is more industrious, enterprising and persevering than the Bengali.

Employment of outsiders in Bengal.

Statistics of migration to Bengal from outside, as given below, throw some light on the employment of outsiders in Bengal:—

Number of persons born outside but found in Bengal.[1]

Province or country where born.	1921.	1911.
Bihar and Orissa	1,228 thousand.	1,252 thousand.
U. P.	343 "	406 "
Nepal	87 "	107 "
Assam	69 "	67 "
C. P.	55 "	21 "
Rajputana	48 "	37 "
Madras	32 "	14 "
Punjab and Delhi ...	18 "	19 "
Europe	13 "	14 "
Bombay	11 "	8 "
Burma	2 "	3 "

It is clear from the above table that the largest number of immigrants comes from Bihar and Orissa, and U. P. But those who come from these provinces are generally employed as labourers, coolies, *darwans,* domestic servants, and do not, therefore, compete with the middle-classes. For the same reason, the figures for Nepal, Assam and C. P. are not important for our purpose. Most of the immigrants from Rajputana and Bombay, and a considerable part of those who come from the Punjab and Delhi are men of mercantile classes, who come here to trade. A

1 Bengal Census Report, 1921, p. 133.

large proportion of those who come from Madras is employed in the railways and mercantile offices, and therefore competes with the middle-class men in Bengal.

We find on the whole that those immigrants who compete with the middle classes have been increasing. The most significant increase is in the case of Rajputana, the number rising from 37 thousand to 48 thousand. This represents the larger current of Marwari merchants from Bikanir and Jaipur to Bengal. The real strength of this community in Bengal must be larger than what is indicated by the above figures. Unlike the other immigrants, the Marwaris have adopted Bengal, more particularly Calcutta, as the land of their settlement. Consequently, a large proportion of the younger generation must have been born in Calcutta, and has therefore been excluded from the list.

Employment of Bengalis outside Bengal.

We have seen above that the immigration of men from other provinces, who compete with the middle classes, has in the last few years increased. Let us now examine the emigration of Bengalis to the other provinces, as given in the following table:—

Number of persons born in Bengal and found in other provinces.[1]

	1921	1911
Bihar & Orissa ...	117 thousand.	165 thousand.
U. P.	19 ,,	26 ,,
Assam	376 ,,	194 ,,
C. P.	3 ,,	6 ,,
Rajputana ...	1 ,,	1 ,,
Madras	3 ,,	7 ,,
Punjab & Delhi ...	6 ,,	4 ,,
Bombay	8 ,,	7 ,,
Burma	146 ,,	136 ,,

[1] Bengal Census Report, 1921, p. 133.

These figures tell us that emigration to Assam, the Punjab and Delhi, Bombay, and Burma has increased, while that to other provinces has decreased. The greatest rise has taken place in the case of Assam ; but this does not indicate any increased employment of the middle-class Bengalis there. The increase is due to the large emigration of Bengali agriculturists to the Assam Valley. Burma shows a substantial increase, but this also does not represent any larger outflow of middle-class men. The emigration to Burma is seasonal, and consists of a large current of people from Chittagong, and, to some extent, from Noakhali and Tippera, who go to Burma to gather the rice harvest and come back after a few months. There remain only two other provinces, Bombay, and the Punjab and Delhi, which show some increase. Increased emigration to the Punjab and Delhi is probably due to the transfer of the capital from Calcutta to Delhi ; while in the case of Bombay, the rise which has taken place on both sides is due to the greater business connection between Calcutta and Bombay. On the other hand, we find a general decrease in all the other provinces. Leaving out of consideration Burma and Assam for the reasons stated above, we find that the total number of emigrants from Bengal to the other provinces has fallen from 216 thousand to 157 thousand. There is a clear fall of 59 thousand Bengalis, mostly of the middle classes, who are supported by the other provinces.

The main reason for this heavy fall in the number of middle-class emigrants from Bengal to the other provinces is the growth of interprovincial

jealousy. There was a time when the educated Bengali was highly sought for in the other provinces to fill up ministerial posts. But progress of education in each of them has brought forth indigenous supply of men who can do such work. The middle-class Bengali has, therefore, become not only unnecessary, but is now looked upon as an undesirable rival in the field of employment. A hostile feeling against the Bengalis, as against all outsiders, has been created in all the provinces. The fall in the number of middle-class Bengalis who are supported by the other provinces is the direct result of this hostile attitude and the deliberate policy of excluding from appointments all outsiders.

Increased competition of Mahomedans.

An important factor affecting the employment of the educated Hindu middle-classes is the increasing competition for appointments of the Mahomedan community. The Mahomedans were in the past much behind the Hindus in respect of modern education, and this fact gave most of the Government appointments to the latter. But recently, there has been a rapid spread of education among the Mahomedans, and the number of suitable men for filling up such posts has largely increased. The growing number of educated Mahomedans is also bringing to the front the question of their employment. A larger proportion of the appointments at the disposal of the Government is, therefore, being given to the Mahomedans, and correspondingly, a smaller proportion is being filled up by the Hindus.

Public administration

In Bengal, the principal occupations of the middle classes are service, the liberal professions and trade. Some of these occupations have been con-

sidered above. Statistics of others which are available in suitable form are given below:— and the liberal arts.

Numbers supported by some occupations.[1]

	(in thousands)		
	1901	1911	1921
Pub. administration (State service)	111	117	115
Education	74	96	113
Law	54	75	87
Medicine	139	163	177
Religion (priests, ministers, etc.)	325	311	310

Religion supports a very large number of middle-class people who are priests. The number supported by it has somewhat diminished. In public administration also there is a fall. Education, law, and medicine show an increase, but the increase is much smaller in the decade between 1911 and 1921 than in the preceding one. The rise in the number of persons supported by education reflects the increase in the total number of students, and the consequent increase in the need for teachers.

Law is the last resource of the Bengali graduate. There is hardly any doubt that the average income of the lawyer in Bengal has considerably fallen. But in spite of this fall in income, there has been a large increase in the number of persons who depend on it. This is chiefly due to the fact that the opportunity for employment in other directions has been diminishing. The Bengali graduate adopts the legal profession not for any love of it; he is actually driven to it by the force of circumstances. When he fails in other directions, he seeks shelter under law.

Since unemployment is the result of an excess of supply over demand, its remedy must lie in removing this excess. This may be done either by Some suggestions. Reduction of supply.

[1] Bengal Census Report, 1921, p. 427.

reducing the supply, or by increasing the demand. But in a country where marriage is considered a sacred duty, and to beget a son is believed to secure the salvation of the soul after death, voluntary reduction of supply to any sufficient extent is difficult. It is indeed true that spread of education among the middle classes has to some extent dispelled such ideas, but they still exercise a considerable sway on the minds of the average middle-class man.

A voluntary reduction of numbers can be brought about by the postponement of marriage and by the control of birth. But at present there does not seem to be any indication of birth control to any appreciable extent even among the middle classes in Bengal. There is, however, a distinct tendency to postponement of marriage. But postponement of marriage, unless it is carried beyond the age of puberty, does not exercise any check on the growth of numbers. As yet, the average age of marriage among the middle classes precedes the attainment of puberty by the girl, and, therefore, the rise in the age of marriage that has taken place has not exercised any influence on the birth rate.

Checking the spread of education.

A check to the spread of education, such as by raising the percentage of failures in examinations, will reduce the number of educated men, and will, therefore, diminish unemployment among them. Within a certain limited extent it may be desirable to do so, but to do it in any large measure is neither wise nor expedient. In the first place, it is only a partial remedy which can give some relief to one section at the cost of another. A forced reduction in the number of educated men will correspondingly increase the number of men of the middle classes who will remain uneducated, and will therefore increase the volume of unemployment

among them. The total volume of unemployment among the middle classes cannot be reduced by a check to the spread of education. Moreover, forces are already at work which are tending to check the growth of educated men. The fall in their earnings, and the unemployment from which they are suffering take away much of the charm from education. The fact that, in spite of this, there is a steady increase in the number of scholars only reflects the very deplorable condition of the uneducated middle-class men. Secondly, man is the end of all human activities. The development of his intellectual side is of very great importance. A country cannot expect to gain anything by merely increasing the intellectual deadness of its people.

Regulation of supply carried to a sufficient length can remove unemployment ; but such a large reduction in supply is not likely to take place in the near future. What is more important is to relieve unemployment by increasing the demand for the services of the middle-class men, by widening the scope for their employment. We have seen that agriculture, which is the largest industry of the province and which supports 77 per cent. of the total population, does not directly give any employment to the middle classes. It has therefore been suggested that the educated middle-class young men by adopting agriculture as their means of livelihood can not only solve the problem of their unemployment, but also, do much good to the country by introducing improved and scientific cultivation. The possibilities in this direction are, however, very limited. The main obstacle in the way is the land system of the province. Almost the whole of the land under cultivation is held by the numerous class

Increasing the demand. Agriculture.

of cultivators in small and detached plots. As the land is the only source of his income, the Bengal cultivator sticks to it like anything. If the middle-class young men are to adopt agricultural occupation, they must take land out of the hands of the cultivators who will thus be converted into landless labourers. Apart from the question of the desirablity of such a step, we have to consider whether it is practicable. How is it possible to oust the present holders of land in face of the tenancy laws of the province acting in favour of them?

If the middle-class young man is to look to agriculture for employment, he must seek land outside Bengal. We have seen that the province of Assam offers in this respect a great opportunity which has been largely utilised by the cultivators of the Mymensingh district. There is still a vast expanse of land in that province awaiting exploitation, which can be taken up by the educated middle-class men from Bengal. But it should be noted here that some sort of organisation is necessary for the purpose. It is not desirable to leave it entirely to individual initiative and action. There are many difficulties which baffle individual attempts, but which can be easily overcome when these attempts are organised. Ignorance, unfamiliarity, inertia, and the dangers and difficulties of a distant land lose much of their force, when migration takes place in batches and under the direction and guidance of a strong organisation. A strong and able organisation can do much to facilitate such migration by collecting necessary information, securing capital, making arrangement for the lands, and in many other ways.

Industries

Possibilities of the employment of middle-class men in industries are greater than in agriculture. It has

been already said that the organised modern industries of Bengal are employing twenty thousand middle-class Indians, mostly in the capacity of clerks. But as yet, the industrial development in the province is very inadequate. It is highly desirable, not only from the standpoint of the employment of the middle classes, but also from the general economic interest of the country, that there should be a more rapid industrialisation. One of the defects of the industrial development in Bengal was found to be the relative insignificance of the share of the Bengalis in it. The ideal of industrial self-sufficiency demands that the sons of the soil should have a dominant control in the industries and trade of the province.

At present there is a standing need for the services of technical experts for the industries, and this is being satisfied by importing men from foreign countries. This is the position not only in Bengal, but in the whole of India. With the progress of industrial development, this need for technical experts will also increase. It is highly desirable that satisfactory arrangement should be made within the country for the training of technical experts. The provision of such education will not only relieve middle-class unemployment, but will also be of material advantage to the future industrial progress of the country. As the Industrial Commission says, "The continuance of conditions which force the industrialists of the country to import so many of their subordinate supervising staff is clearly most undesirable. They form a serious handicap to progress and militate against the ideal of an industrially self-sufficing India."[1]

Development of large organised industries will

[1] See Report, p. 118.

certainly increase the demand for the services of the middle-class Bengalis ; but it should be remembered that the educated young Bengali cannot expect to take the initiative in this matter. He cannot himself start new enterprises which require a large command of capital and a considerable amount of experience and organising power. While, therefore, he will look to the big capitalists and industrialists of the country to start new enterprises and to demand his services as clerk, foreman, supervisor, technical expert, or manager, there is another field of industrial expansion where he can without much difficulty set up as an independent business man. Progress of technique and other influences are tending to increase the size of the representative business unit in many industries, but there are still other forces which are working in favour of the smaller man, and which are therefore enabling him to survive ; and where labour is cheap, the advantage of the large business is not so decided. There are, however, two obstacles which require to be overcome—the supply of capital, and the provision of some technical training. That the Government should accept a greater responsibility for the provision of technical education has been emphasised by the Industrial Commission. The difficulty about capital requires a very large development of industrial banking in the country. For the purposes of the small industrialists, a good deal of assistance can be rendered by the co-operative industrial banks. The progress of co-operative banking in India has been chiefly in the direction of agricultural credit societies. It is not intended in any way to minimise the supreme importance of co-operative agricultural banking, but for the expansion of small industries, a more rapid progress of co-operative industrial banking is necessary.

There is a good deal of scope for the employment of the middle-class Bengalis in trade and commerce. The Bengali trader is being gradually displaced by the mercantile classes from other provinces, specially the Marwaris who have spread over the whole of Bengal. It is high time that the Bengali merchant should realise the consequence of this outwardly imperceptible change, and should try to make a stand against this dangerous and steady invasion of the outsiders on the trade and commerce of the province. At the same time it is highly desirable that the educated Bengalis should shake off their past unreasonable attitute, and should go in for trade and commerce in large number. Instead of running after a twenty-five rupee appointment, they should try to set up as independent business men. What is first of all necessary for this purpose is that they should recognise the dignity of honest labour. Their general education and their trained faculties, instead of being a handicap, as in the past, will help them to a considerable extent.

INDEX